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# Canadian Railway and Marine World

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## GENERAL INDEX

### FOR 1915

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# Canadian Railway AND Marine World

ESTABLISHED 1898.

Number 203

TORONTO, CANADA, JANUARY, 1915

Subscription Rates, Page 21



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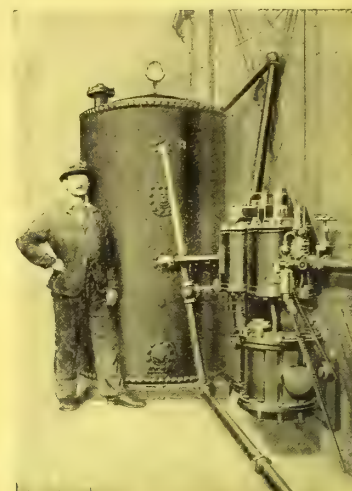
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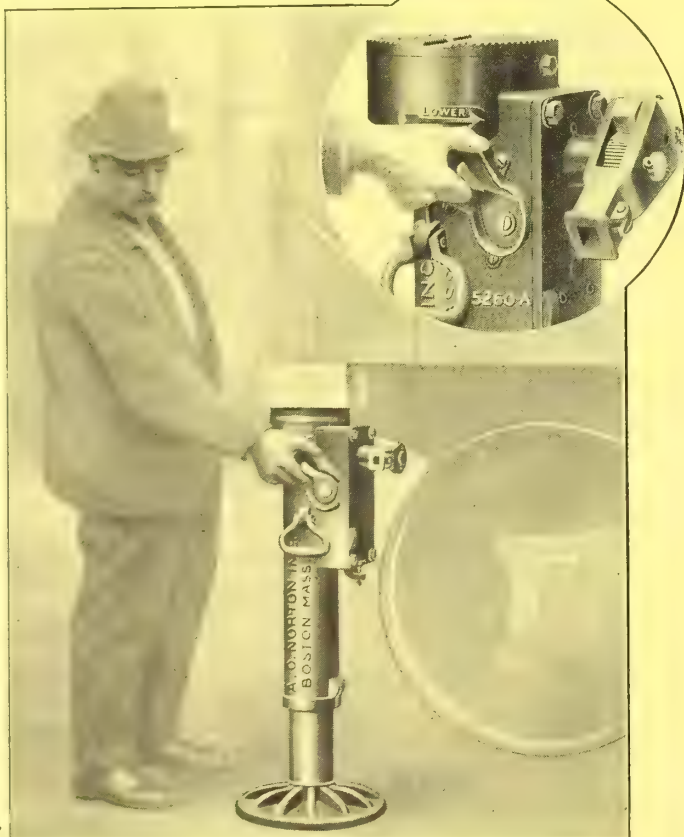
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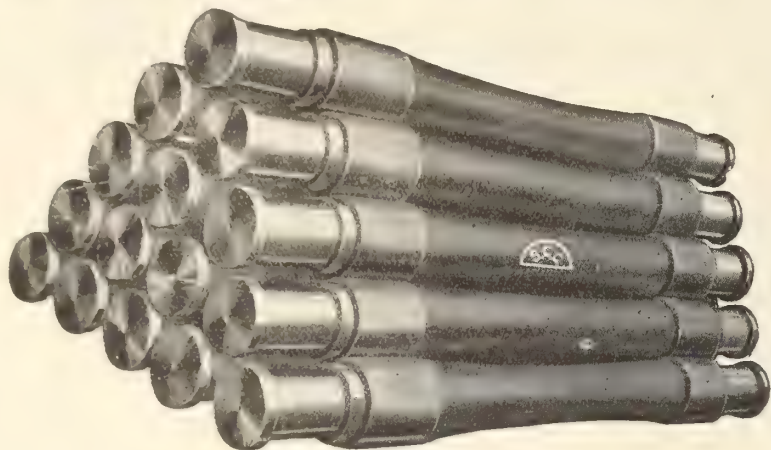




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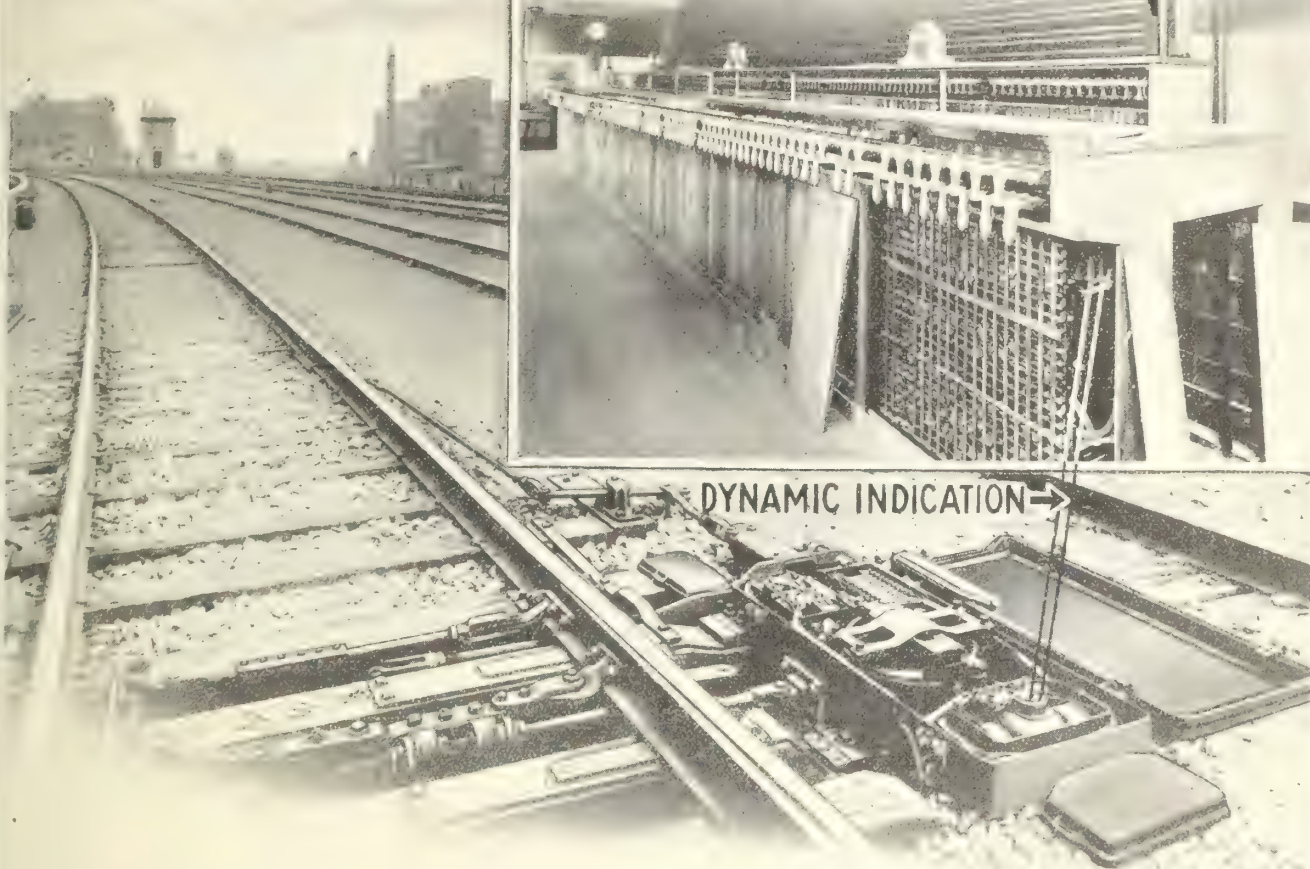
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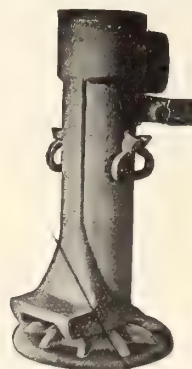
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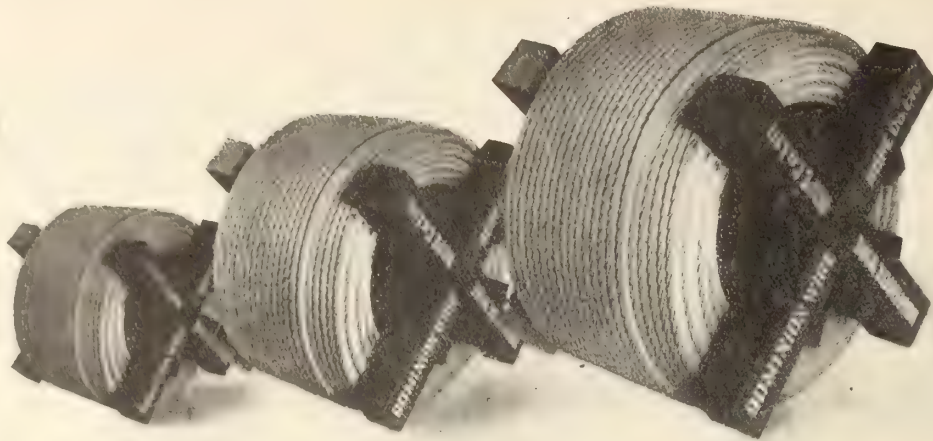
211600	C M	Effective	Carrying	Capacity	Now
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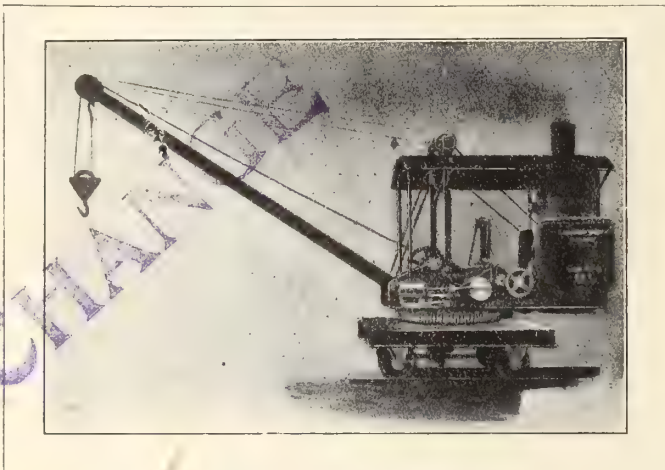
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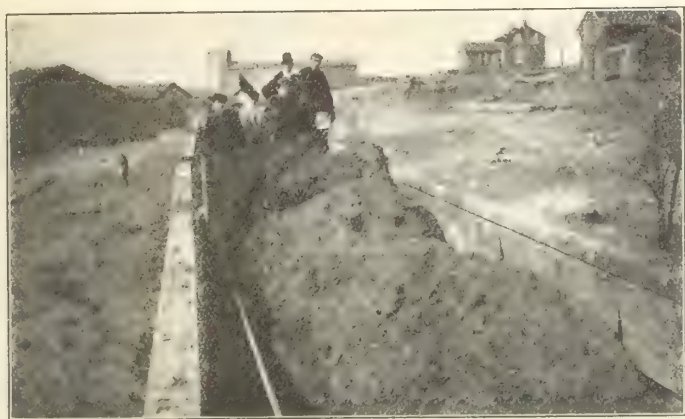
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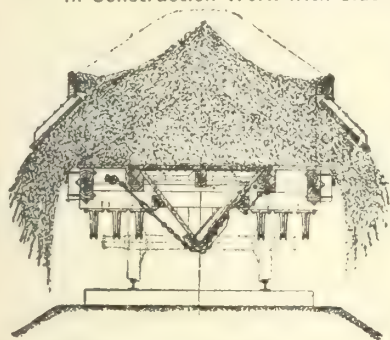
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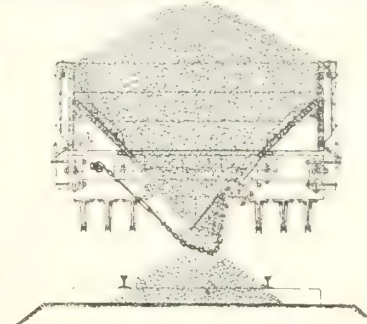
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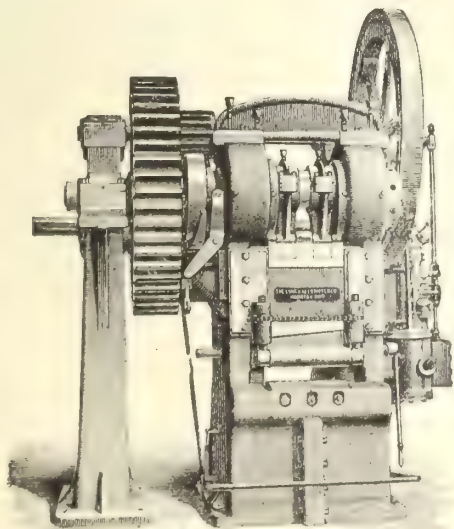
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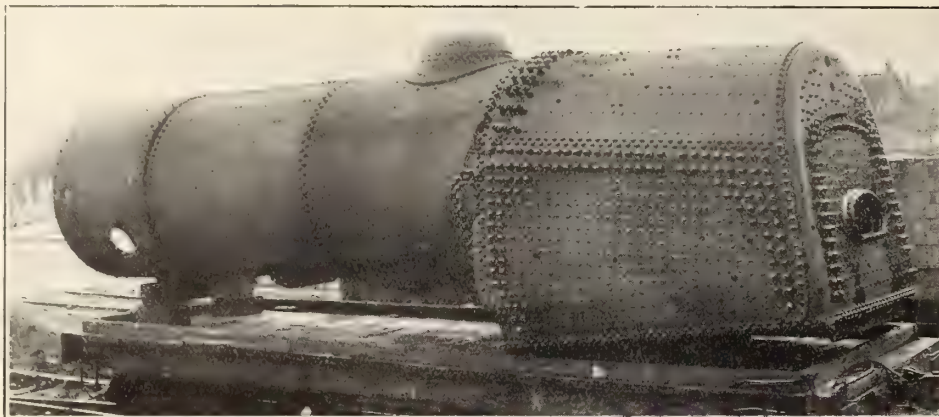
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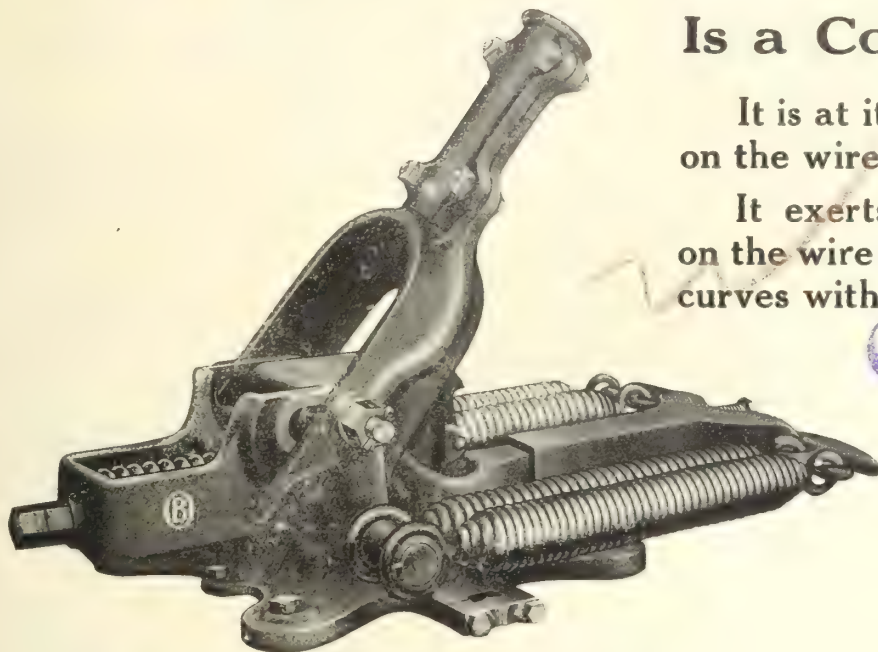


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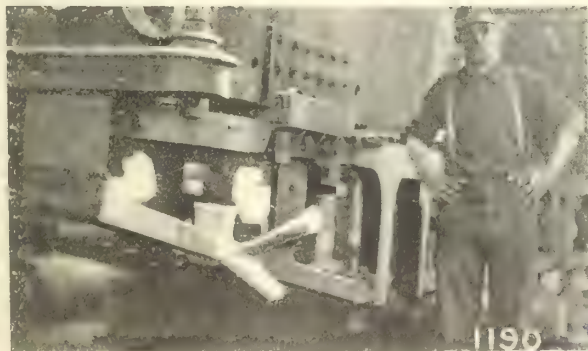
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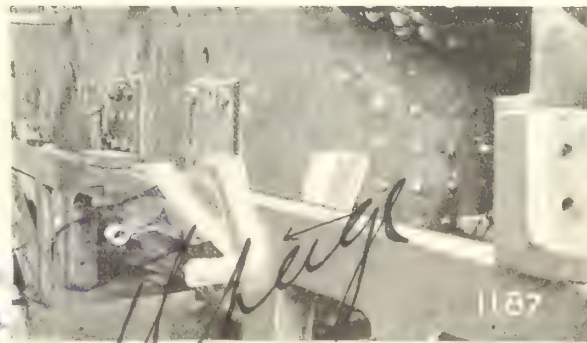
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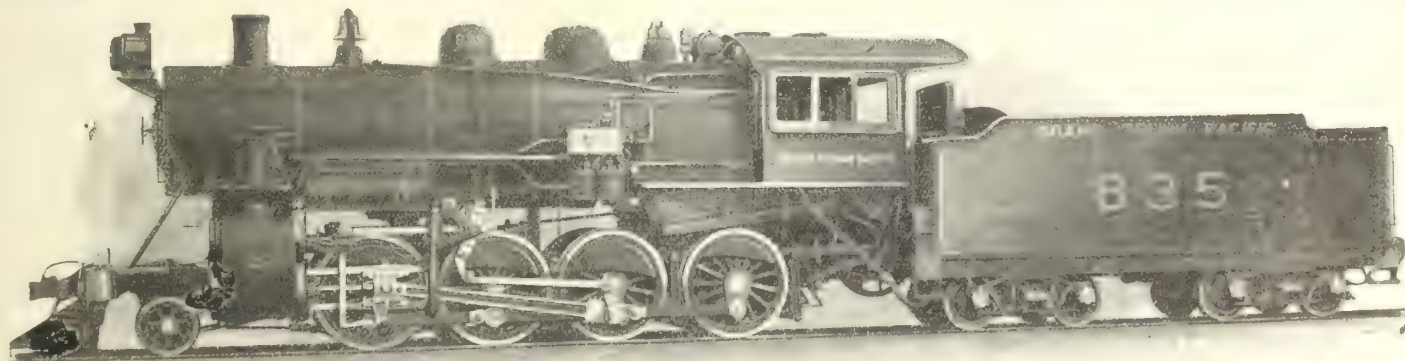
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They are much superior to a painted wooden sign, which has to be repainted at frequent intervals, and they last a lifetime.

There is absolutely no wear to them, and we guarantee that they will not fade or be affected by the weather in any way.

We will be pleased to quote you prices on request.

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70 Bond Street, Toronto, Ont.

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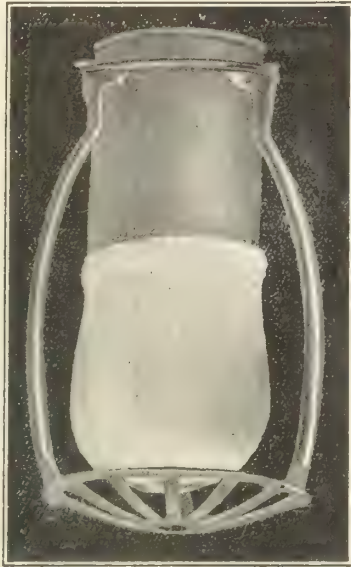
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*Marine Engines and Boilers, all Sizes*

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No other system of car lighting gives clean, safe and efficient light without intricate mechanism, subject to defects and failures. Pintsch Mantle Light is the only absolutely dependable method of lighting railway cars.

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pull a load of ten tons on several trailers.

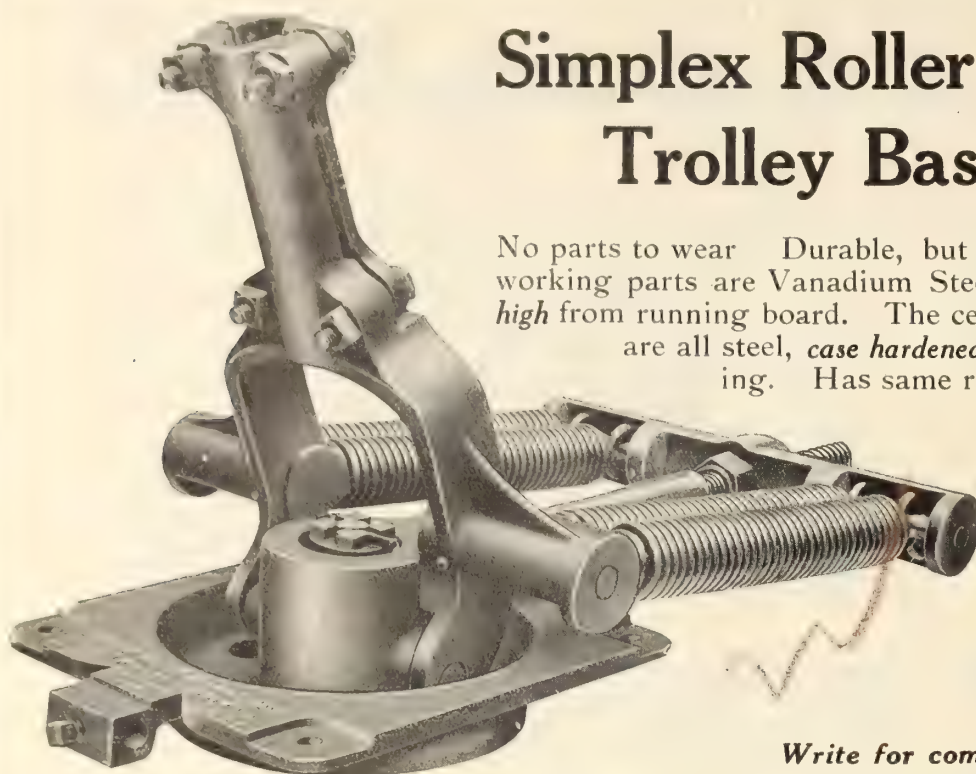
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LOWEST TENSION —  
when the pole is hooked to  
roof of car.

INCREASED TENSION  
—as the pole goes up.

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Commercial Acetylene furnishes a strong, penetrating light without being blinding. Nothing to get out of order. Economical to maintain. Small gas cylinder supplies several weeks' lighting.

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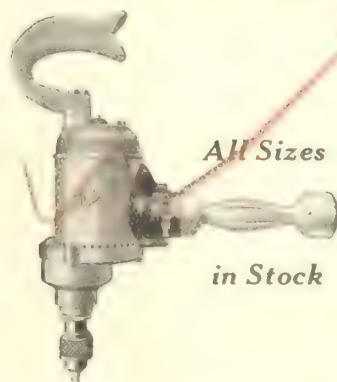
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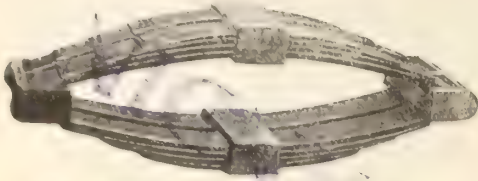
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### SIZES

No. 000	Drilling up to	$\frac{1}{4}$ "
No. 00	" "	$\frac{5}{16}$ "
No. 0	" "	$\frac{3}{8}$ "
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No. 2	" "	$\frac{7}{8}$ "

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Double Elliptic Street Car Springs with Cast Ends

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LOCOMOTIVE, TENDER AND PASSENGER CAR SPRINGS of every description.  
EQUALIZING, DRAWBAR, BUTTER AND SPIRAL SPRINGS of all kinds.

STREET RAILWAY SPRINGS, from the largest to the smallest.

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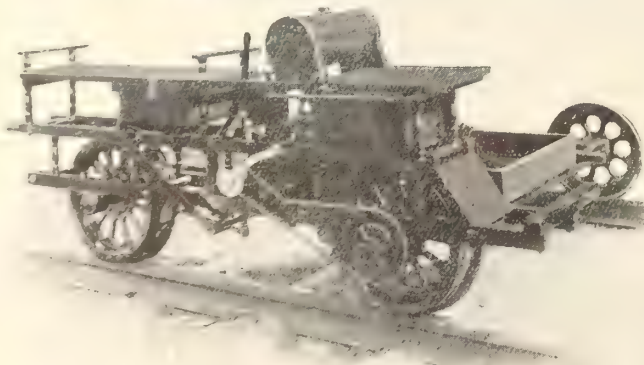
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For HAND and PUSH CARS

Is the most economical wheel ever designed for reason of its improved construction—its extra thickness of metal in throat and flange—its greater strength due to deep corrugations in web, its perfect hub fit, absolutely preventing loose hubs—altogether making its life twice that of any other on the market. Results have made our claim good. If you have not already tried them, please do so and be convinced.

Specify Kalamazoo Improved Wheels on your next requisition.



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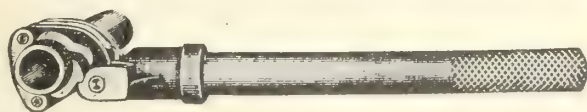
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## PRICE LIST C

Length Handle	Set No.	Pipe Handled	Set Complete	Extra Handle	Extra Girths
10 in.	1	1, 1 1/4, 1 1/2 in.	\$6.00	\$2.50	2, 1, 1 1/4 in. \$ .75
20 in.	2	1, 1 1/4, 1 1/2, 2 in.	7.50	2.50	1, 1 1/4, 1 1/2 in. 1.00
25 in.	3	1 1/4, 2, 2 1/2, 3 in.	7.50	3.00	1 1/4, 2 in. 1.25
					1 1/2, 2, 2 1/2, 3 in. 1.25

Prices on larger sizes furnished upon application.

DESIGNED ESPECIALLY to handle pipes spaced closely as in coil work. No. 2 1/2 wrench illustrated requires but three-quarter inch space between pipes.

POSITIVE GRIP instantly taken. Operates without lost motion in stroke of handle. Can be locked or released easily in any position on the pipe.

RATCHET-LIKE ACTION. Successive grips can be taken without having to hold the wrench on the pipe. By a slight twist of the handle, which is round and knurled, the wrench is locked in any position.

CAN'T CHEW. The Parmelee will make or break the tightest joints without injuring pipe or threads, as it has no teeth. The only wrench suitable for galvanized pipe.

CAN'T CRUSH. The Parmelee will grip, without crushing pipe that has become weakened by long use or exposure and separate hopelessly rusted joints, saving its cost many times over.

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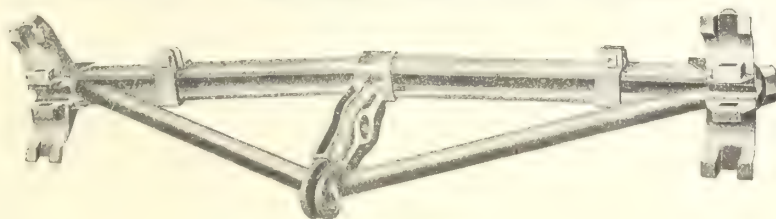
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Only all Canadian Route to Canada's Winter Ports  
**HALIFAX, N. S.** **ST. JOHN, N. B.**

Where Canada's next Contingent will embark.

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Absolutely Fireproof

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## American Flexible Staybolts

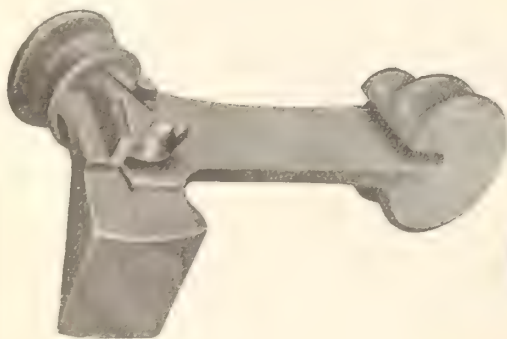
Manufactured in Montreal



Made of the best standard staybolt iron, adding flexibility by process of making as shown above—closely approximating a rope structure.

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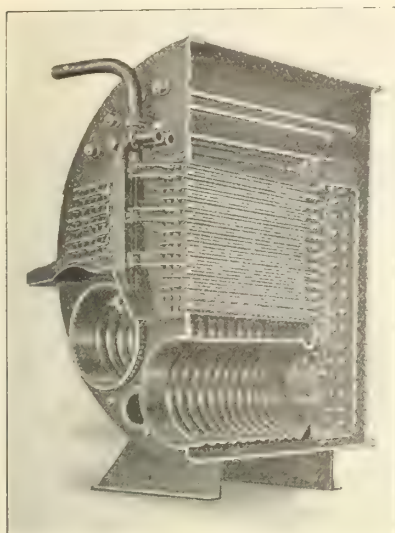
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Saves from 10% to 25% of fuel per unit of power developed.  
Reduces coal bunker requirement, making possible increased revenue cargo with the same draft.

Increases power output of a given marine power plant from 10% to 25%.

Is adaptable to either new or existing boilers of the fire tube type, with no change in their design or construction.

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## BERRY BROTHERS' RAILWAY VARNISHES

The special features of our Railway Finishing Varnishes are their easy working and perfect flowing qualities, rich full gloss, and great durability. There are two others also we would like to emphasize—uniformity and dependability.

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## Galena Railway Safety Oil

in Headlights, Marker and Classification Lamps, to secure Efficiency of Service, Maximum Candle Power, Clearness of Light.

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for use in Switch and Semaphore Lamps, and all lamps for long time burning, to avoid smoked and cracked chimneys and crusted wicks.

Tests and Correspondence Solicited.

**S. A. MEGEATH,**  
PRESIDENT.



# Canadian Railway and Marine World

January, 1915.

## Champlain Market Station at Quebec, for the National Transcontinental Railway.

Plans were prepared by N. T. R. engineers in the early part of the year for a station building and platforms in Quebec, and a contract was let to W. J. Gosselin, Levis, Que., for the construction work shown in the accompanying plans. The work is in progress, and is expected to be completed at an early date.

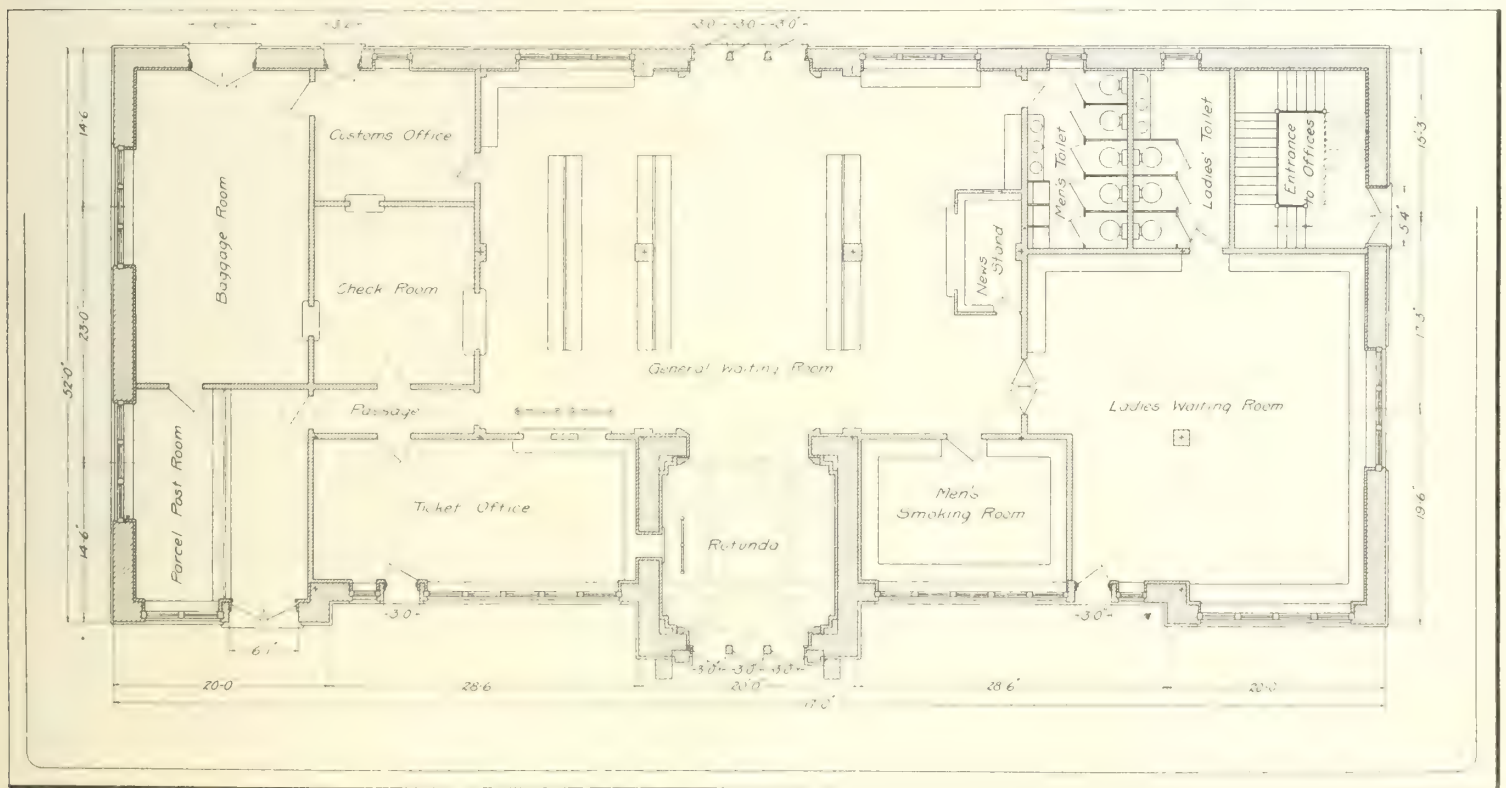
The station is being built on the Champlain Market site, on Champlain St., directly below the Dufferin Terrace, near the Levis ferry, and adjoining King's wharf, and will be reached by a line from the west, which skirts the shore below the cliffs from the Quebec bridge to the station site. It was

of a platform being at 26 ft. 8½ in. centres, with a central distance of 16 ft. between adjoining tracks between platforms. A power house will be located in the north west corner of the site.

The building will be a composite structure of concrete, stone and brick. At each of the corners, at a point midway in each end, at four intermediate points along the back wall, at two points in the front wall, and at the four corners of the rotunda tower, there will be concrete foundation piers, carried down to solid bearing ground. Each of these piers will be 4 ft. thick, varying in length from 6 to 9 ft. The concrete subwall will be

in the front of the building, there will be a chain suspended canopy projecting 8 ft., and 17 ft. wide. It will be of wired glass on a metal frame, with an ornamental iron edging.

The entrance rotunda, 16 ft. square, will lead directly into the general waiting room. Along the left side of the rotunda, there will be a ticket wicket from the ticket office. The general waiting room will be 33 by 50 ft., with a composition floor, and wainscotted to a height of 4 ft. It will contain three double benches, 18 ft. long. To the left of the entrance way in the general waiting room, there will be a double ticket wicket from the



Ground Floor of Station at Quebec, National Transcontinental Railway.

originally intended to build the main station on this site, but it was subsequently decided to utilize the site for the station now being erected, which will be used for local traffic only, and the main freight and passenger terminal will be a joint one with the C. P. R. about the site of the latter's present Palais station.

From the small volume of traffic that it is anticipated will be handled locally through the Champlain Market station, it was not necessary to erect a large building. In consequence, it will measure only 52 by 117 ft., and will be parallel with the river, on the east side of the site, with the front facing the river. Immediately back of the station will be the concourse, with a 40 ft. platform at the rear end of the stub tracks, with four platforms 15½ ft. wide leading off from this back platform, each 250 ft. long. The station will have 7 tracks, 6 of which will come in alongside the platforms, those each side

2 ft. 8 ins. thick, carried by these piers, the wall between the piers being spanned by three 18 in. I beams bedded in the concrete. The concrete wall is to be carried up to the ground level. The principal walls will be built from the top of the concrete foundations to a height of 4 ft. from the ground level, and will be 18 ins. thick. They will be of Beauport, or Chateau Richer, limestone, with headers, and the outer facing of this wall will be Riviere a Pierre granite. Above this line, the walls will be of brick, except for the outside face, which will be of Citadel shale brick. The brick will be entirely kiln run common. All of it will be laid in stretcher courses, with every fifth course a header course. The window sills and caps will be of Deschambault dressed stone. The porch or main entrance, comprising the columns, base blocks and cornice, will also be of Deschambault dressed stone. The inner columns will be false. Over the porch

ticket office, while on the right hand side of the room, there will be a news stand, 6 by 11 ft., entered from the general waiting room. The men's smoking room, entered from the general waiting room, will adjoin the rotunda on the right, and will be 13 by 18 ft. It will have a wall seat extending clear around the room, and will also have a composition floor. The entrance to the women's waiting room will adjoin that of the men's smoking room, which will be approximately 30 ft. square, also with a composition floor, and with a wall seat extending around the room. Back of the women's waiting room, there will be two lavatories for men and women, respectively, each 9 by 16 ft., and tiled with a mosaic floor. The women's will be entered from the women's waiting room, and the men's from the general waiting room.

To the left of the rotunda, will be located the ticket office, 13 by 30 ft., floored in hard-



wood. There will be three ticket windows and two entrances, one from a passageway from the general waiting room, and the other from the front of the building. The passage from the general waiting room will be 4 ft. wide, leading to the parcel post office, which will be 16 by 20 ft. Back of this room, and connecting with it through a door, will be the baggage room, 20 by 29 ft., with

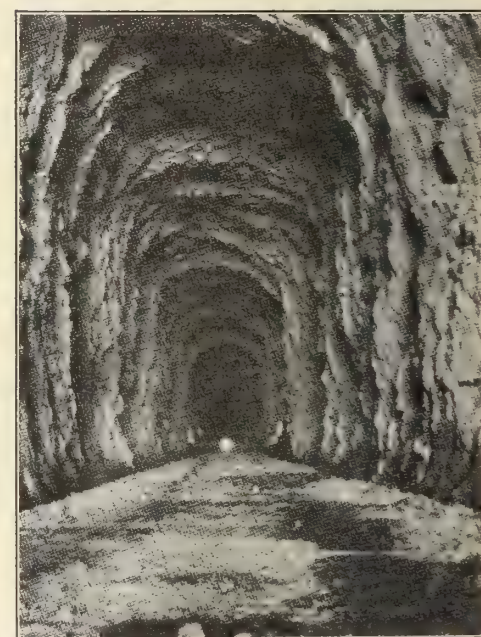
with three windows on the rear, and six on the front sides. There will be a room under the tower, with a stairway leading up into the tower from it. The height of rooms on the three floors will vary, the ground floor rooms being 15 ft., first floor, 12 ft., and the second floor, 9 ft.

The tower will have a total height of 68 ft., surmounted by a flagpole. On the four sides

small is the percentage of the freight traffic which moves from coast to coast. A considerable part of this traffic also will be carried by the railways notwithstanding the existence of the canal route. For certain high class merchandise it will be cheaper to pay a somewhat higher freight rate and have the shipment go through by rail in a week or less, rather than incur the delay of nearly a month required for the voyage from a north Pacific port to a north Atlantic port through the Panama Canal.

### A Small Sighting Tunnel on the Canadian Northern Pacific Ry.

The tunnel interior shown in the accompanying view is that of tunnel 14, 2837 ft. long, under Battle Bluff on Kamloops Lake, on the C. N. P. R. in British Columbia. Near the far portal the centre line is curved for 300 ft., and the daylight seen in the centre of the bore comes through a 4 by 4 ft. sighting tunnel 300 ft. long, driven to check up

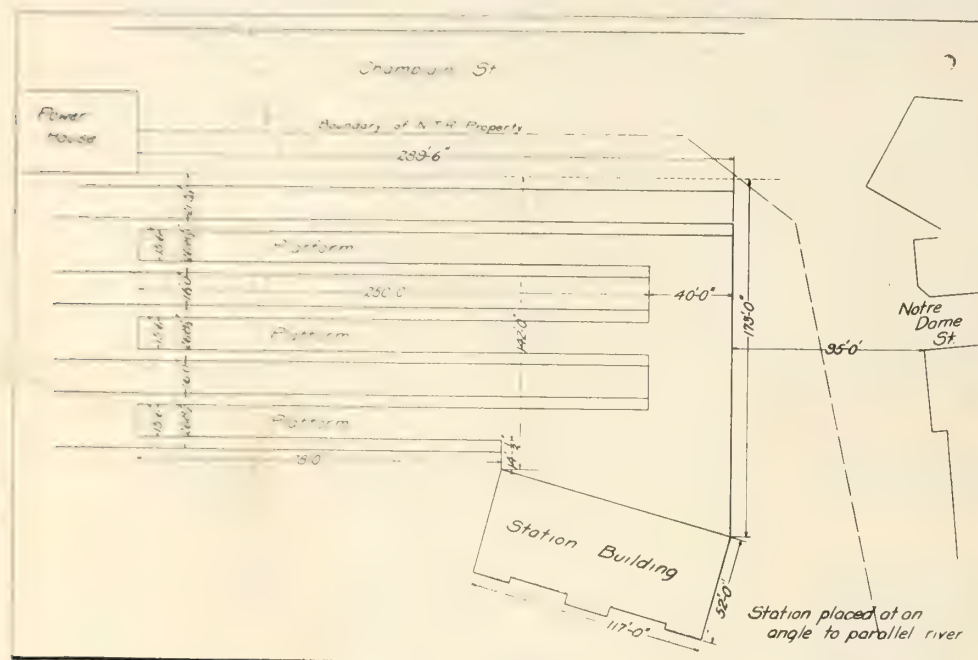


Sighting Tunnel to Check Alignment.

the alignment. By the use of the sighting tunnel it was possible to produce the tangent sight to a point several miles distant across the lake, whence the ridge immediately over the tunnel centre line could be seen clearly. —Engineering Record.

**Valuable Information on an Accident Report Blank.**—On the Baltimore & Ohio Rd., when an accident occurs to an employee, the foreman under whom the employee is working must fill out and send in to headquarters an accident report blank. The Chicago Tribune says that while a gang of carpenters were at work on a bridge over the Chicago River, one of them missed his footing and fell in. The foreman filled out the accident blank and opposite the question "What does the injured person say?" he wrote, "He says it was a damn good thing he could swim."

**Australia imported locomotives in 1912 to the value of £468,572, and in 1913 to the value of £425,395.** Of those imported in 1913 the United Kingdom supplied £409,434 worth, and the United States £1,951. The chief states importing locomotives were New South Wales, Western Australia and Queensland, in which the requirements of the state systems could not be filled by the established railway work shops and some manufacturing companies.



Station and Tracks at Quebec, National Transcontinental Railway.

a mastic floor. This will have a double swing door at the rear, connecting with the outside for the baggage entrance way. There will be a door on the right, leading into the customs room, 12 by 15 ft., which will be floored in hardwood. This room will also connect with the general waiting room. The check room adjoining will be 15 by 16 ft., with hardwood floor. It will be entered from the passage, and will have counter windows on the other three sides into the baggage room, customs office and general waiting room. The rear of the general waiting room will open out on the train concourse through three doors.

The street corner of the main floor will be entered through a door on that side to a stairway, leading to the offices on the first floor. This will lead into a central 8 ft. corridor, extending the full length of the building, with offices on either side. The first room on the right will be a lavatory, 11 by 19 ft., tiled in mosaic. Next in order will be an office, 17 by 19 ft. The next room, in the centre of the rear of the building, will be the train dispatcher's office, 19 by 29½ ft., with a counter extending around the doorway, and an operator's desk along a 10 ft. window at the rear. The remainder of that side of the corridor will be divided off into three offices, two 12 by 19 ft. each, and the third, 17 by 19 ft.

Opposite the stairway on the front side of the building there will be a conductors' and trainmen's room, 17 by 21 ft., followed by two offices, 15 by 19 ft. and 14 by 19 ft. respectively. Under the tower there will also be an office, 15½ by 16 ft., the balance of that side containing three more offices, 14 by 19 ft., 15 by 19 ft., and 17 by 21 ft., respectively.

The second, or top, storey will form one large room, the corner stairway leading directly into it. On account of the sloping sides to the roof, it will be 40 by 105 ft., slightly smaller than the other floor areas,

of the tower, at a height of 57 ft., there will be clock faces. The flat top of the building will be surmounted by an ornamental iron border.

### The Panama Canal and the Transcontinental Railways.

Engineering News, New York, says:—During the quarter century since the construction of a transoceanic canal across the Central American Isthmus became a live issue, a vast deal has been printed regarding the effect of such a canal upon the transcontinental railways. It has been very generally assumed that the canal would be a serious detriment to these railways on the one hand, and on the other that its construction would be particularly advantageous to the states on the Pacific coast to relieve them from the alleged exorbitant freight charges of the railways from the east. In recent years, however, a saner view has gradually gained ground, and it has come to be realized by those closest to the problem that the amount of railway traffic which the canal will affect and which will be diverted to the canal will be, after all, comparatively small. Further, it is seen that the stimulating effect upon certain lines of traffic and business resulting from the canal will have in all probability some compensating benefits for the railways.

Some attention is given to this matter in the annual report of the Northern Pacific Rd. Co., issued recently, which says:—"The bulk of the traffic moving into and out of the ports on either ocean starts from or is destined for the country's great interior. The main lines of the Northern Pacific at the head of Lake Superior to Puget Sound are more than 1,900 miles in length, but the average haul of a ton of freight on the company's railways last year was only 275 miles."

These figures indicate how comparatively



## Methods and Devices in the Timiskaming and Northern Ontario Railway Shops.

### A Small Air Motor.

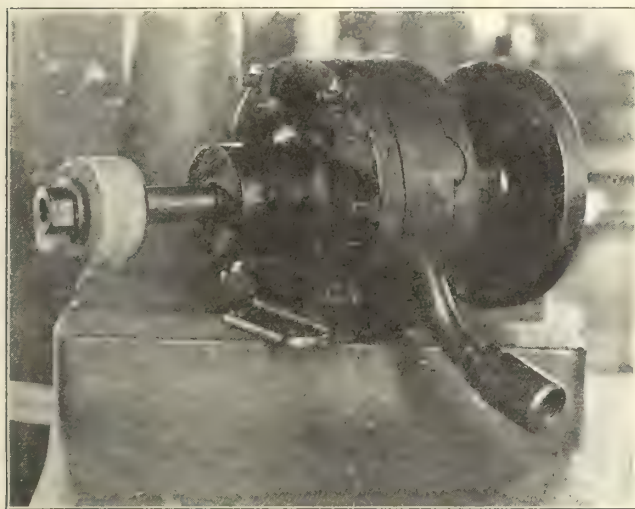
The oft repeated statement that necessity is the mother of invention is exemplified in a small air motor used in the T. and N.O.R. shops, and which is shown herewith. Occasion arose some time ago to grind out the bore of a damaged air hammer, and as there was no spindle grinding machine in the shop, it became necessary to construct some sort of apparatus that would fulfill requirements. The re-

Power is received from outside sources at high potential, and is stepped down before bringing it to the switchboard shown, which is equipped with all the necessary apparatus for handling the motor and generator, and battery charging. The motor is a 5 h.p., 60 cycle, 104-208 volt, 48-24 amp., 1,750 r.p.m. single phase machine, belt connected to a 7.5 k.w. 125 volt, 60 amp., 1,000 r.p.m. direct current generator, which supplies the storage batteries. The supply to the batteries is controlled through the

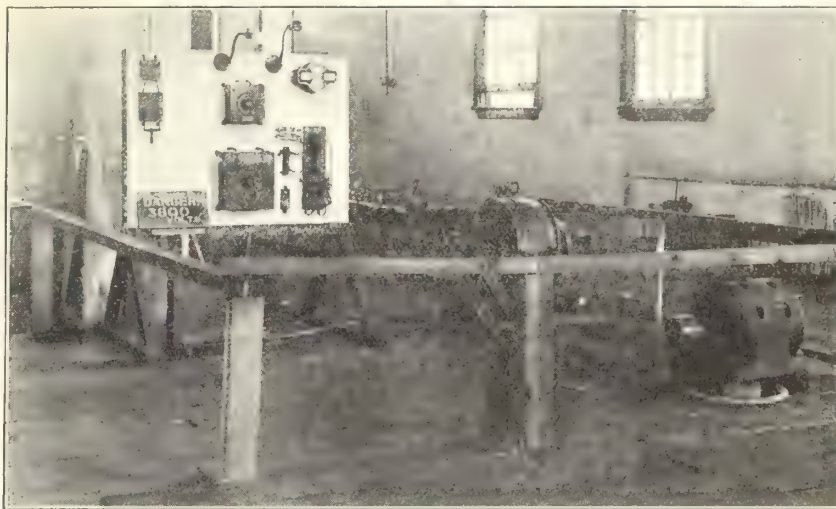
stroke, and also acts as a guide for the operator.

### A Flange Lubricator.

On a railway line that has a great many curves, such as the T. and N.O.R., which traverses a very rough and hilly country, where the locating engineers, in order to secure economical gradients, were forced to follow a circuitous route, the flange wear due to the rounding of so many curves, is very great. The amount of tangent is comparatively small on this line, which follows circuitous valleys and along the edges and winding shores of rocky lakes, making the number and degree of curves high as com-



Small Grinder Air Motor, made from Scrap Parts.



Battery Charging Equipment in the T. and N.O. Ry. Shops.

sult was the production of this little motor by E. McGahey, who is employed in the locomotive machine shop.

The end, or bearing members, of the motor, are old heads removed from the ends of disinfectant receptacles in passenger car lavatories, which had been scrapped. From their very nature they proved most serviceable, as they had side flanges, which serve as a base on which to set the motor. Between these two head members, which are about 6 ins. diam., there is secured a ring, about 1 in. thick, by means of bolts passing through both heads and the ring, from side to side as shown. The rotor consists of a set of 12 thin galvanized iron blades set in the central spindle. This spindle extends through the heads, and on one end there is a light flywheel, and on the other the emery grinder. Air enters through a 1/4 in. pipe, and exhausts through a small slit on the opposite side. It is the intention to modify the construction so as to make the size of the exhaust variable as required.

The motor can be bolted on the carriage of a lathe, and with the member to be ground in the chuck, excellent results can be accomplished. A wide range of uses has been found for this motor.

### A Battery Charging Installation.

On some of the more recently acquired equipment of the T. and N.O.R., especially the steel passenger cars received last year, electric lighting is used. To handle the battery charging on these cars, special provision was made at the North Bay shops to take care of this phase of car work, by equipping a charging station in one end of the locomotive house, between a pair of the tracks. The accompanying illustration shows the power apparatus, and the battery charging stand in the background.

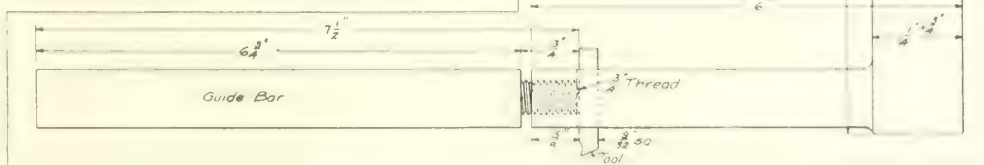
switchboard, and a long cable connects up the batteries in series on the stand in the background.

The cars, as received from the builders, are minus the lighting equipment, which is installed in the shops. The set of batteries in the background is for one of the new steel cars, and has just been charged preparatory to placing in the cars.

### Shaper Tool.

In the T. and N.O.R. shops there is in use a shaper tool, the invention of E. McGahey, which has proved useful in certain classes of work, especially the shaping of keyways. It is illustrated herewith. There is no slotter in these shops, so such work

pared to lines more favorably situated in agricultural country. The flange wear on the locomotives became so great that steps had to be taken to minimize it if possible. The method followed has not only materially reduced it, but has the additional advantage of removing most of the oil that is carried out from the air compressor in the exhaust, this oil formerly having an injurious effect in coating the exhaust cavity and corroding the exhaust tip. The



Shaper Tool with Extension End.

as the slotting of keyways, which is usually done on that machine, must be done otherwise.

The tool, as will be noticed, is similar in most particulars to the ordinary screw clamp tool used for a variety of purposes, the essential difference being that instead of a set screw being used in the end of the bar to clamp the tool, there is an extension rod, of the same diameter as the bar, with a threaded end, which fits into the set screw hole, clamping the tool in this manner. The advantage of this arrangement is that it serves as a handle for lifting the tool out of the cut on the return

flange lubricant is this otherwise injurious oil, which, by the means adopted, is put to a useful purpose.

A Westinghouse dust collector, with 1 1/4 in. pipe connection, is placed in the exhaust pipe line from the air compressor to the exhaust, and is attached between the frames on the cross brace just back of the crosshead guides. The exhaust enters through the top, and from the forward side it passes out and thence through the former course to the exhaust cavity, but the passage through the dust collector, changing the direction of flow of the exhaust, causes the heavy oil in the exhaust to be



precipitated to the bottom of the dust collector. From this bottom there is a  $\frac{1}{4}$  in. pipe connection, leading to a T, with a branch pipe leading to each side of the locomotive.

The bottom cap of the dust collector has four 1 1/2 in. holes drilled in it, through which the oil escapes through the T connection to the flanges, with just enough steam passing through the holes to carry the oil to where it is needed. The ends of the pipes leading to the outside of the locomotive are bent around, so that the tip is radial to the flange corner, the tip being about  $\frac{1}{2}$  in. back from the corner.

We are informed by W. Black, General Foreman, by whom these flange lubricators have been applied, that the results obtained have been excellent, and that even in the very severe winter weather to which this line, situated far north and in a comparatively high altitude, is subjected, no trouble has been experienced from the apparatus freezing, enough steam passing through to keep the parts free. Nearly all the road locomotives have been equipped, but it has only been found necessary to pipe them to lubricate the flanges of the front driving wheels, as it is only there that excessive flange wear has been experienced. The flange wear has been materially minimized, as no trouble has been experienced with the oil running on the tread of the tire reducing the adhesion.

### Interesting Shop Kinks.

Among my jobs as machinist once was one of repairing a leaky boiler, in which there were about 700 copper flues of  $\frac{1}{2}$  in. diameter. After having spent four successful hours in order to get out one of the flues that had to be replaced with a new one, I got the idea of threading one end of the flue with a tap, large enough to make sufficient hold for a bolt or screw, but not so large as to cut through the copper flue. When I had the bolt or screw in the one end of the flue, I unloosened the other end of the flue, put a steel rod through the flue, hit the rod with a hammer, and it took only about a minute to get each of the other faulty flues out of the boiler in my new way of doing it.

Once I was reaming out a new wristpin lining for an air compressor. The reamer was  $2\frac{1}{2}$  ins. in diameter, but it was just a trifle too small for making the bore in the lining large enough, so I took a strip of thin copper, such as are used as fuses connected with cables or bars, transmitting electric currents. First I used a strip of the copper, wide enough to cover three of the teeth of the reamer, and let it follow the reamer through the bore, but still the hole was too small. After using another copper strip, covering four of the reamer's teeth, I got a perfect fit for the wristpin.—G. H. Ander, New York.

### Diaphragm Between Cab and Tender on Intercolonial Locomotives.

The Intercolonial Ry. is equipping part of its passenger motive power with a diaphragm between the cab and tender, to protect the enginemen more thoroughly against inclement weather. The arrangement is identical with that in use on some of the C. P. R. locomotives, which was described in detail in Canadian Railway and Marine World for June, 1912.

The rear wall of the cab has a large square opening, around the contour of which there is a diaphragm ring as between vestibuled passenger cars. A corresponding

diaphragm ring on the tender is held in contact with the former by means of four spring plungers in the forward end of the tender. The tender diaphragm has hinged thereto, which bears against a passage wall from the cab, the hinged plates being kept apart by four intermediate coiled springs on each side. This hinged arrangement permits of free movement of the locomotive with regard to the tender, as in passing around curves, the pressure of the connecting plates being always maintained by the springs, so that the cab is at all times closed to the weather in a more effective manner than by the usual canvas curtain method. Coal passes into the cab floor through the usual coal doors.

The sides of the cab are equipped with doors, and entrance is made through them by way of a ladder embodied in the cab structure, and which is slightly forward of its usual position, and of a different design. We are indebted to G. R. Joughins, Superintendent of Rolling Stock, Canadian Government Railways, for this information.

### Tool List on Canadian Northern Quebec Railway.

T. C. Hudson, Division Master Mechanic, C. N. Q. R., Joliette, Que., writes Canadian Railway and Marine World:—"I note your interesting publication frequently publishes methods used to facilitate mechanical work. I am, therefore, sending you a tool list which is used on the C. N. Q. R. lines, which has been found very convenient when transferring locomotives from one division to another, also when locomotives are allotted to contractors.

TOOL LIST CANADIAN NORTHERN QUEBEC RAILWAY		
Eng No <input type="text"/>	Assigned to <input type="text"/>	
<input type="checkbox"/> Water Gauge Lamp	<input type="checkbox"/> Packing Hook	<input type="checkbox"/> Oil in Cans
<input type="checkbox"/> Steam Gauge Lamp	<input type="checkbox"/> Packing Iron	<input type="checkbox"/> Engine
<input type="checkbox"/> Lamp Burners	<input type="checkbox"/> Engineer's Torch	<input type="checkbox"/> Valve
<input type="checkbox"/> Fire Irons	<input type="checkbox"/> Bell Rope	<input type="checkbox"/> Coal
<input type="checkbox"/> Coal Pick	<input type="checkbox"/> Water Bucket	<input type="checkbox"/> Signal
<input type="checkbox"/> Cold Chisel	<input type="checkbox"/> Broom	<input type="checkbox"/> Coal on Tender
<input type="checkbox"/> Hand Hammer	<input type="checkbox"/> Coal Sprinkler	<input type="checkbox"/> Tons
<input type="checkbox"/> Monkey Wrench	<input type="checkbox"/> Crosshead Blocks	<input type="checkbox"/> Other Material shipped with Engine
<input type="checkbox"/> Pipe Wrench	<input type="checkbox"/> Crank Pin Blocks	
<input type="checkbox"/> Classification Lamp	<input type="checkbox"/> Scoop Shovel	
<input type="checkbox"/> Marker Lamp	<input type="checkbox"/> Green Flags	
<input type="checkbox"/> 1 Gal Oil Can	<input type="checkbox"/> Red Flags	
<input type="checkbox"/> 2 Gal Oil Can	<input type="checkbox"/> White Flags	
<input type="checkbox"/> 3 Gal Oil Can	<input type="checkbox"/> Car Replacers	
<input type="checkbox"/> Tallow Pot	<input type="checkbox"/> Valve Stem Packing	<input type="checkbox"/> Engine disconnected and following parts put on engine
<input type="checkbox"/> Oil Feeder	<input type="checkbox"/> Piston Rod Packing	
<input type="checkbox"/> Torpedoes	<input type="checkbox"/> $\frac{3}{4}$ & $\frac{1}{2}$ S Wrench	
<input type="checkbox"/> Fuses	<input type="checkbox"/> $\frac{3}{4}$ & $\frac{1}{2}$ S Wrench	
<input type="checkbox"/> Pump Packing	<input type="checkbox"/> $1\frac{1}{2}$ & $1\frac{3}{4}$ S Wrench	
<input type="checkbox"/> Padlocks & Keys	<input type="checkbox"/> $1\frac{1}{2}$ & $1\frac{3}{4}$ S Wrench	
<input type="checkbox"/> Tool Box	<input type="checkbox"/> Socket Wrench	
<input type="checkbox"/> Pump Wrench	<input type="checkbox"/> for Mud Plugs	
Boiler washed out <input type="checkbox"/>		
Boiler tested <input type="checkbox"/>		
Tools and Material on Engine as per above List <input type="checkbox"/>		
Messenger in Charge of <input type="checkbox"/> Engine		
Engine and Material received in good condition except as mentioned below <input type="checkbox"/>		

"With the adoption of this list there need be no difference of opinion between the sender and receiver regarding material and tools furnished and returned. The messenger in charge of locomotive is furnished with copies in duplicate of material on it prior to its departure for another divisional point or contractor. On arriving at destination the messenger has the tools checked by the foreman or person authorized to receive them. The list having been checked and signed, one copy is retained and the other returned by the messenger to the headquarters station, thus completing a record which can be referred to any time if needed."

### Track Section Prize Competition on Eastern Lines, Canadian Pacific Ry.

For the past two years an annual track section prize competition has been carried out on the eastern lines, C.P.R., which has aroused a healthy spirit of rivalry and keen competition among the officers and section force of the different divisions and districts. Sixty-two prizes are awarded in the competition, as follows:

A general manager's prize to the foreman having done the best season's work on eastern lines.

Four general superintendent's prizes, to the foreman on each division who has done the best season's work, exclusive of the winner of the general manager's prize.

Fourteen district superintendent's prizes, to the foreman on each district who has done the best season's work, exclusive of winners of higher prizes.

Forty-three roadmaster's prizes, to the foreman on each roadmaster's territory who has done the best season's work, exclusive of winners of higher prizes.

Under this system no man can win more than one prize, and all foremen have an equal chance, as the quality of the work done throughout the season is the deciding factor, and not the actual physical condition of the section at the end of the season. The basis on which the sections are judged is entirely efficiency and careful consideration is given throughout the season to the condition of, and work done on, ditches, gauge, spiking, line, surface, bolts, rail wear, so far as it can be controlled by the section forces, switches, sidings, right of way and station grounds, track signs, cattle guards and fences. The amount of work done and the hours of labor put in, both by regular force and extra gang, are also carefully considered, and the foreman accomplishing the best work with the least amount of labor—the physical condition of the section, as to grades, alignment, drainage, and character of roadbed being taken into consideration—wins the first prize.

The number of hours of regular labor and the number of hours of extra labor on the section are figured against the number of ties renewed, tie plates installed or changed, rails changed over on curves and ditching done. The amount of track handled, right of way, spikes and bolts is fairly uniform on all sections, so that the condition with respect to these items at the end of the season is usually a criterion of the amount and quality of the work done thereon throughout the season. Where special conditions affect such work they are taken into consideration. Track gauge testing machines are run over each roadmaster's territory periodically during the season and records are kept of the condition of gauge found.

Towards the end of the season each roadmaster, after careful consideration of each section, as above outlined, reports to his superintendent the prize winner on his territory. The superintendent and resident engineer then carefully inspect each roadmaster's prize section, and decide on the winner of the superintendent's prize, reporting same to the general superintendent, who, together with the division engineer, decides which superintendent's prize section is entitled to the general superintendent's prize. Finally the best section on each division is inspected in detail by the General Manager and the Engineer of Maintenance of Way, together with division officers, gauge and surface are checked throughout, bolts, spikes, and every detail of track maintenance examined, and on these observations, taking into account physical, labor and other conditions, the General Manager's prize is awarded.



## The Handling of Snow and Care of Track in Winter.

Canadian Railway and Marine World for December contained two papers on this subject, written in competition for the prize offered by the Canadian Northern Ry. management to roadmasters on its lines east of Port Arthur, viz., the paper by R. J. Munroe, Roadmaster at Joliette, Que., to which the prize was awarded, and a paper by W. M. Jocklin, Track Inspector, Port Arthur, which was highly commended by the judges. Through the courtesy of L. C. Fritch, Assistant to President, C. N. R., we are enabled to publish in this issue four other papers which were submitted in the competition, as follows:—

By H. B. Cassidy, Roadmaster, Quebec.

**Cleaning tracks of ice and snow around frogs, switches and interlockers** is very important, and should be handled promptly, as accumulation of snow in such places forms ice and strains the connecting parts around switches and guard rails. Prompt attention is required during stormy weather by men in charge to see that they are kept clear of snow and ice, and it is the duty of every roadmaster to impress upon foremen the necessity of attending to this work promptly. Where foremen allow carelessness to creep in, it is quickly noticed, switch points become strained and will not close properly, guard rails will turn out of their place and in such cases the track spreads, causing derailments. The only secret to this work is prompt attention and to have the work well done. The same applies to interlocking plants, otherwise the adjustment will be affected, very often doing away with the use of signals at a very particular time, necessitating the use of hand signals in stormy weather.

Leaky locomotives, particularly yard ones, are the worst enemy trackmen have, especially in this part of the country where there is so much snow and cold weather. Every effort should be made on the part of the mechanical department to avoid this, as it often necessitates extra men to keep tracks clear, thus increasing the maintenance of way department's pay roll. If the money expended in this way was applied to the leaky locomotives good results would be obtained.

**Patrolling the Track.**—Track should be patrolled by competent men every day. In the event of a foreman not being able to go over his section every day, it should be patrolled by a competent man, capable of knowing by the look of the track whether it is spreading or not during the winter.

The interested trackman endeavors to educate himself, and it has always been my policy to endeavor to educate every man to know the look of track and what causes it to spread, such as being out of line and surface, and what action the trains are liable to have on such track. Owing to our climate track often becomes very rough in the course of 24 hours; in this case the competent, interested man will be able to see at a glance what is liable to happen and report it to his foreman, who will make every effort, even if other work should suffer, in order to get out and have the track shimmed and put back to proper shape again.

**Shimming Track.**—Every foreman should be carefully instructed in this work, shimming first the rail which is lowest, which is very often the case where track heaves badly, bringing it to surface, shimming joints, centres, and quarter, and having shim spiked to proper line by going back a short distance from the work to see that the line is maintained when the rails are

being spiked, every second tie shimmed and spiked and the other side brought to surface, shimmed in the same way, in all cases using the gauge. The work of finishing the shimming can then be completed quickly. Shims should never be driven in by force but fitted so as to avoid raising or humping the rail. In bad curves or cuts, work of this nature should not be done without first being well protected.

A foreman should never undertake to shim a bad place that he cannot finish before the approach of a regular time card train. Good judgment must be used on his part and on the other hand he must not be so much afraid as to think that he cannot get through with a certain piece of work in the way of shimming before the arrival of a train.

Spikes must be put through all shims over  $\frac{1}{4}$  in. and track well braced. Shimming 3 ins. and up should have a long shim every third tie, all the way underneath both rails, and every second tie as the shim gets greater. In doing heavy shimming such as this, the foreman must keep himself well protected by the use of proper signals.

**Snow ploughs and flangers** should be properly equipped and in readiness for the first storm of the season, and should always have a clawbar, spiking hammer, track gauge, two track wrenches, some track spikes and bolts ready in the event of a derailment. A competent foreman should be in readiness and should have the privileges of going over the road a few times before it is necessary to run the plough, in order to be acquainted with the different changes along the line, such as sidings which have been put in and other changes made during the summer. Ploughs should only be run when really necessary, as it is known that there is no revenue from running them when they are not necessary, in this case good judgment must be used, as in many cases ploughs and flangers are not put over the road at the proper time. For example there may not be much of a storm and trains may get through with probably very slight delay. If the storm ends at that, the line should be cleaned out immediately, as locomotives team much better hauling trains, they are not picking up snow from the centre of the track nor bothered with side drifts, and it also gives section men an opportunity to get over their sections and see the conditions of their track and to perform the work required. If it is possible to keep trains running until the storm is over it is always better to do so and then make one run of the plough and clean the road. In extremely bad storms and where it is not advisable to cancel trains, ploughs should be kept running as often as possible to keep the road open.

It is an easy matter to throw 2 ft. or even more of snow out of a cut where a plough can be run at a fairly good rate of speed, in order to throw the snow far enough from the track, but if 2 ft. or more of snow gets into cuts and is allowed to remain there during a storm, it does not take long to fill the cut level, so that the running of ploughs frequently is necessary where cuts are bad and storms heavy. Great care should be taken when ploughs stall in the snow, to see that after being pulled out of the snow bank that there is no ice on the flange along the rails, and that the face of the snow bank where the plough backed out is broken with shovels, so as to avoid breaking the front of the plough or causing derailment from the ice in the flange when taking the second run into the bank.

By E. Meyers, Roadmaster, Toronto.

**Drainage** is an important matter in connection with maintenance of track. The track should be well drained at all seasons. All cuts and ditches should be well cleaned out in the autumn before the wet season sets in, and ditches well opened at the mouth of cuts, so that water may get away freely. Culverts should also be well cleaned out in the autumn, and during the early part of the spring, ice and snow should be removed from culverts and mouths of ditches before the snow melts in the spring, so that the water can be freely drained off from the right of way.

**Snow fences** for cut protection should be erected 25 or 30 ft. outside of the right of way fence, according to the condition of the cutting. For instance, if it is a deep cut it will occupy a larger part of the right of way, whereas a small cut will not be nearly the width and not so open as a larger cut; therefore one has to use judgment as to the distance for setting up snow fence. All snow fencing should be erected before the frost sets deeply in the ground, and two stakes should be driven in, one at each end of fence panel, and the leg of snow fence nailed to the stake with one nail at each end, so as to prevent fencing being blown down by wind and broken. When taking down snow fencing in the spring it should be piled in small piles and on two old ties in a level spot, so as to not to warp the snow panels. The piles should be 200 ft. or more apart, as a protection in case of one pile taking fire.

**Handling of Snow Ploughs and Flangers.**—It is not advisable to have the same man assigned to operate both snow plough and flanger, as in the event of a heavy storm coming up while the flanger is out on the line with the snow plough man in charge, there might not be an experienced man available to take charge of the plough. Another reason is that a cheaper man can be obtained to run the flanger; for instance a section laborer should be taught to perform this work at laborer's rate which is much lower rate than that paid to a man competent to run a snow plough. The flanger should be run over the line often, as it is very cheaply handled and a great benefit to the track. Even if the flange is not very heavy, the flanger should be run in order to keep the flange free from accumulating hard snow and ice. With a bad flange it is difficult for trains to operate over the road with a heavy tonnage and it is also dangerous. Running the flanger quite frequently often saves the necessity of running the snow plough, and avoids a good deal of expense. Dispatchers should be kept posted in regard to storms by trainmen on the line, also by agents at different points, and should order out snow plough when necessary. During a heavy storm freight trains should be side tracked at once, until the snow plough has cleared the track and the storm has ceased. Freight trains which are left running on the main line during a storm often tie up the road for a long time, whereas if freight trains are side tracked and snow plough is kept running immediately ahead of passenger trains, the passenger service can be kept moving with little or no detention. For each division there should be two snow ploughs. From the Ottawa Division there should be a snow plough at Rosedale and one at Trenton, also one at Ottawa, and one at Trenton, for Ottawa Division. One flanger at Trenton and one at Ottawa is quite sufficient.

**Shimming** is also an important feature of track maintenance. A track poorly shimmed is dangerous, and is often the cause of rails breaking and track spreading. Shim-



ming should only be done where positively necessary. In many cases section foremen will shim along a sag perhaps 100 ft. or more whereas 25 to 30 ft. would answer the purpose and would make just as good riding track as though the whole sag had been taken out and the rails set up on high shims, which, as previously stated, is dangerous. A section foreman should always use a level board when shimming, the same as when surfacing, and should be very careful about spiking the track to line and gauge. All shims should be bored and spiked through the shim holes. Where spikes have been pulled ties should be plugged, and long spikes used on outside of rail, and also on every other tie on inside of rail where shimming is done. The balance of the ties should be spiked with 6 in. spikes inside. Each shim that is placed under the rail should have an equal bearing. At each end of where shimming is done very thin shims should be used; shingles may be found very useful for this. The track should be well braced where high shimming is done, with a shim 2 ins. thick and both edges of the end of shim bevelled off so as to fit under the ball of the rail, with three spikes in the shim on the end of the tie and one through the hole of the shim and the other two at the end of the shim. This should be done on every three or four ties, according to the height of the shimming. Where shimming is done on the track, particular attention should be given to it, when sectionmen are going over the section each day, to see that the track is staying in good condition and that shims are all in place and not split. Care should be taken to see that the track is not heaved any more at a point where shimming is done, not by merely looking at it, but by testing it with the level board.

Switches and interlocking plants require a great deal of attention. In case of a heavy storm there should be a man stationed at the plant. All switches should be kept free from snow and ice and should be examined by the foreman the first thing in the morning when coming on duty, and the switches should be tested by throwing them to and fro to see that they are in good working order. During a heavy storm a man should also be kept on duty in the yard over night. The very best grade of oil should be used for switch lights.

All Spikes over the entire section should be tapped down tight to the rails in the autumn, so as to keep the rails firm in place; spikes should be tapped down carefully so as not to break off the heads. All bolts in track should be well tightened before frost sets in. Tightening bolts in frosty weather tends to break them. Track walking should not be allowed in winter except when impossible to run a hand car, so that the men may have the proper material and tools to work with. When it is necessary for a man to walk track, he should be an experienced man, and should start walking the first thing when he comes on duty in the morning.

By O. Ogden, Supervisor of Track, Ottawa.

After ties are all in and track surfaced, the foreman should start to get ready for winter, and the first and most important thing is to keep the water away from the track. All ditches and water courses must be properly cleaned out, then the ballast trimmed, and trimming ballast has a lot to do with the heaving by frost or making rough track. It should be trimmed very even, as heaps in the ballast will make humps in the track, especially, where the track is through cuttings or wet places. The centres of track must be kept well filled so

that water will not lie on the track, and switches and frogs must be trimmed so snow can be got away easily. All low places must be tamped up to surface, leaving the track in good surface when frost comes; bolts kept tight, and spikes driven down, and the inside spikes put down first to avoid as much as possible the canting out of the rail.

A thing all trackmen find hard to do is to keep the rail up to proper level, especially on curves. Track must be kept in good gauge and line and shimmed up to good surface, as very little in the surface makes a track ride rough when it is frozen hard; all ice and snow to be kept cleaned away from frogs and switches, and when frost comes, and before heaving or snow comes, the foreman should get snow plough and flanger markers up in the proper places.

All crossing plank should be removed that can be, cut all brush, have all rubbish piled up, and in the spring have it and all grass burned, all fences repaired, station yards cleaned and raked up, making the right of way have a neat and clean appearance.

By D. Macdonald, Supervisor of Track, Trenton, Ont.

To ensure a good winter track, all surfacing, lining, and spiking to gauge should be done not later than Nov. 15. The bolts and joints should be gone over and tightened and made secure.

## Birthdays of Transportation Men in January.

Many happy returns of the day to:—

J. Abrams, Wharf Freight Agent, C. P. R., Vancouver, B. C., born at Manchester, Eng., Jan. 24, 1870.

W. U. Appleton, General Master Mechanic, Intercolonial Ry., Moncton, N.B., born there, Jan. 29, 1878.

R. Armstrong, Superintendent, District 4, Manitoba Division, C. P. R., Souris, born at Kingston, Ont., Jan. 27, 1865.

F. X. Belanger, General Freight and Passenger Agent, Temiscouata Ry., Riviere du Loup, Que., born at Chlorydormes, Que., Jan. 20, 1876.

R. H. Bell, General Agent, Canadian Northern Ry., Chicago, Ill., born at Toronto, Jan. 13, 1865.

E. Bower, Travelling Passenger Agent, Canadian Northern Ry., Saskatoon, Sask., born at Nottingham, Eng., Jan. 17, 1889.

G. McL. Brown, European Manager, C.P.R., London, Eng., born at Hamilton, Ont., Jan. 20, 1866.

R. F. Chapman, Chief Dispatcher, District 1, Saskatchewan Division, C. P. R., Regina, born at Coal Branch, N.B., Jan. 21, 1874.

W. A. Cowan, Resident Engineer, Canadian Government Railways, Truro, N.S., born at Galt, Ont., Jan. 22, 1877.

J. E. Dalrymple, Vice President, G.T.R., G.T.P.R., and Central Vermont Ry., Montreal, born there, Jan. 1, 1869.

A. Davidson, General Agent, G. T. Pacific Ry., Prince Rupert, B.C., born at St. Henri, Montreal, Jan. 29, 1885.

J. E. Everell, Superintendent, Montmorency Division, Quebec Ry., Light and Power Co., Quebec, born at Cap Rouge, Que., Jan. 1, 1863.

Sir Sandford Fleming, K.C.M.G., director, C.P.R., born at Kirkcaldy, Scotland, Jan. 7, 1827.

J. Gordon, Foreman Electrical Engineer, Car Department, Grand Trunk Pacific Ry., Transcona, Man., born at Forres, Scotland, Jan. 1884.

Gordon Grant, Chief Engineer, National

Where rails creep, they should be bunted back, so as to avoid joints breaking away in extreme cold weather.

Points of switches should have the ballast lowered so that the gravel would not heave and interfere with the working of the switch.

Ditches, drains, and culverts should be cleaned and opened out before it freezes up.

In cuts where there are stones or rock projecting out, these should be tried, and if loose should be taken out, if not they should be carefully watched as the frost goes out in the spring.

Snow gates should be placed before it freezes up, and set in the ground so the frost will help hold them to their place.

As soon as the first snow comes all switches and sidings should be shoveled out and snow cleared back, to prepare for another storm.

Before snow gets too deep, the snow plough and flanger should be run and track opened out, cuts and snow banks to be widened by shovelling.

Track surface should be kept level by shimming, as soon as track begins to heave with frost. Where shimming has been done on curves, it should be braced.

As winter advances, snow ditches and culverts should be opened, to prepare for thaw. As frost is going out care should be taken to keep the surface level, by lowering the shims, and shimming should be done where frost is going out unevenly.

Transcontinental Ry., Ottawa, born at Dufftown, Scotland, Jan. 2, 1861.

G. F. Hichborn, formerly Agent, Great Eastern Fast Freight Line, New York, born at Boston, Mass., Jan. 13, 1875.

Carl Howe, Manager, New York Central Fast Freight Lines, Chicago, Ill., born at Berrien Springs, Mich., Jan. 11, 1870.

W. C. Hunter, ex-Manager, New Brunswick Coal and Ry. Co., Moncton, N.B., born at St. John, N.B., Jan. 4, 1865.

H. G. Kelley, Vice President, G. T. R., Montreal, born at Philadelphia, Pa., Jan. 12, 1858.

James Kent, Manager, C.P.R. Telegraphs, Montreal, born Jan. 15, 1854.

A. J. McGee, Secretary-Treasurer, Timiskaming and Northern Ontario Ry., Toronto, born at Lachine, Que., Jan. 24, 1876.

G. C. Martin, General Freight and Passenger Agent, Toronto, Hamilton and Buffalo Ry., Hamilton, Ont., born at Creemore, Ont., Jan. 2, 1866.

J. J. Nelligan, Division Freight Agent, Canada Steamship Lines, Ltd., Montreal, born at Hamilton, Ont., Jan. 20, 1876.

G. Pepall, Assistant Division Freight Agent, G.T.R., and Agent, National Despatch-Great Eastern Line, Toronto, born at High Wycombe, Bucks, Eng., Jan. 15, 1849.

W. Phillips, European Railway and Steamship Manager, Canadian Northern Ry., London, Eng., born at Toronto, Jan. 31, 1870.

W. Pratt, Superintendent, Sleeping and Dining Cars and Hotels, Canadian Northern Ry., Winnipeg, born at Sibbertoft, Northamptonshire, Eng., Jan. 18, 1870.

John Pullen, President, Canadian Express Co., Montreal, born at Shepton Mallet, Eng., Jan. 23, 1863.

L. J. Rouleau, Travelling Freight Agent, G.T.R., and Agent, National Despatch-Great Eastern Line, Montreal, born there, Jan. 6, 1879.

B. G. F. Rutley, ticket agent, C.N.R. and G.T.P.R., Fort Garry Union Station, Winni-



peg, born at Chatham, Ont., Jan. 25, 1879.

S. J. Shannon, Comptroller and Treasurer, Intercolonial Ry., Moncton, N.B., born at Halifax, N.S., Jan. 18, 1865.

J. G. Sullivan, Chief Engineer, C.P.R. Western Lines, Winnipeg, born at Bushnell's Basin, N.Y., Jan. 11, 1863.

Ross Thompson, Chief Engineer, St. John and Quebec Ry., Fredericton, N.B., born at Newry, Ireland, Jan. 1, 1865.

O. C. Walker, Inspector, Refrigerator Service, C.P.R. Western Lines, Winnipeg, born at Newport, Mon., Eng., Jan. 31, 1877.

## Comparison of Canadian Pacific and Canadian Northern Locomotives.

A subscriber at Winnipeg wrote Canadian Railway and Marine World recently as follows: "To decide a bet will you kindly answer the following question: Are the 2,400 class, 2-8-0 type, locomotives on the C.N.R. more powerful, and can they in all conditions haul more than the 5,000 class 2-8-2 type locomotives on the C.P.R.?"

**Data.**—Following are the data of the two types of locomotives referred to:

Class	C.P.R.	C.N.R.
	2-8-2	2-8-0
Weight of locomotive	255,500 lbs.	232,000 lbs.
Weight on drivers	197,300 lbs.	208,000 lbs.
Cylinders	23½x32 ins.	24x32 ins.
Boiler pressure	180 lbs.	200 lbs.
Diameter of drivers	63 ins.	63 ins.
Capacity rating	210% or 42,000 lbs.	50% or 50,000 lbs.

C.P.R. and C.N.R. capacity ratings differ in the unit, the C.P.R. unit being 20,000 lbs. for 100%, and the C.N.R. unit 1,000 lbs. for 1%. Hence the wide difference in the percentage capacity rating.

**Computation.**—The tractive effort of a locomotive is the average maximum tractive force at the tread of the driving wheels, assuming a 100% cutoff in the cylinder. It is given by the following equation:

$$F = \frac{d^2 p s}{D}$$

F is the tractive effort at the driving wheels in lbs.; p, the average maximum pressure in the cylinder in lbs. per sq. in., usually taken as 85% of the boiler pressure; s, the piston stroke in ins.; d, the diameter of the cylinder in ins.; and D, the diameter of the drivers in ins. Hence,

for C.P.R. locos.,

$$F = \frac{(23\frac{1}{2})^2 \times (180 \times 0.85) \times 32}{63} = 42,918 \text{ lbs.}$$

for C.N.R. locos.,

$$F = \frac{(24)^2 \times (200 \times 0.85) \times 32}{63} = 49,737 \text{ lbs.}$$

However, the available tractive effort of the locomotive is limited by the grip of the drivers on the rails, which is only about 23% of the weight of the locomotive on the drivers. Hence, the maximum gripping effect of these locomotives is:

for C.P.R. locos.,  $197,300 \times 0.23 = 45,379$  lbs.

for C.N.R. locos.,  $208,000 \times 0.23 = 47,840$  lbs.

**Conclusions.**—From the above, it will be seen that the C.N.R. locomotives have a greater gripping effect on the rails than the C.P.R. ones. They also have a greater tractive effort; in both types the tractive effort exceeds the gripping effect. It will, therefore, be seen that the C.N.R. locomotive can start a heavier train load under similar conditions than the C.P.R. ones, and maintain a heavier load at low speed.

However, the principal reason for the introduction of the mikado locomotive, with its reduced proportional weight on the drivers, was the demand for a locomotive with greater boiler capacity, which is possible by lengthening it over the trailing wheels, as at higher speeds the tractive effort is limited

F. J. Watson, Assistant General Freight Agent, G.T.R., Montreal, born at Toronto, Jan. 12, 1866.

G. H. Webster, M. Can. Soc. C.E., Vancouver, B.C., born at Creemore, Ont., Jan. 31, 1858.

T. H. White, Chief Engineer, Canadian Northern Pacific Ry., Vancouver, born at St. Thomas, Ont., Jan. 27, 1848.

A. Wilcox, General Superintendent, Central Division, C.N.R., Winnipeg, born at Kincardine, Ont., Jan. 2, 1865.

by the capacity of the boiler to supply the cylinders with steam, falling much below the gripping effect of the tires on the rails, so that the full extent of the latter cannot be realized. Hence, the C.P.R. locomotives, having a larger boiler capacity, can supply a greater volume of steam, and in consequence, under similar loadings, can maintain higher speeds than the C.N.R. locomotives.

It will thus be seen that for low speeds, the C.N.R. locomotives are more powerful, but as the speed increases beyond the point where the tractive effort and gripping effect lose their balance, the C.P.R. locomotives, on account of their greater boiler capacity, have a greater capacity.

After the foregoing answer had been prepared in Canadian Railway and Marine World's office, copies of it were sent to H. H. Vaughan, Assistant to Vice President, C.P.R., Montreal, and to S. J. Hungerford, Superintendent of Rolling Stock, C.N.R., Winnipeg for criticism or suggestions. Mr. Vaughan replied that it was satisfactory to him, and that he had no suggestions to make. Mr. Hungerford has written as follows: "In general our locomotive was designed to haul bulk freight at a maximum running speed of 25 miles an hour, as experience has shown the economy of handling ordinary freight traffic in heavy trains at moderate speed. We believe that this statement is true in relation to the coal consumption, but it is also true in respect to wear and tear on equipment and track. Beside this there is the important advantage of greatly reducing the element of danger; the ordinary type of freight car truck not being safe at high speeds.

"I take exception to the assumption that the gripping effort upon the rails is 23% of the weight thereon, as experience has shown a great diversity of results. The factor of adhesion of the Canadian Northern locomotive is practically 4.16 (24%, Editor C. R. and M. W.), admittedly low, but the results in service have been entirely satisfactory, and on a dry rail the full tractive effort can be employed without slipping. The actual adhesion upon slightly wet, muddy or greasy rails varies so widely that no factor can be safely assumed, but with modern sanding appliances this trouble is almost entirely overcome and the employment of the highest possible tractive effort is undoubtedly justified.

"The boilers of the Canadian Northern locomotives have proved their ability to supply all the steam required by the cylinders when working at maximum cut off at speeds under 10 miles an hour, and also when working at the speed limit at an economical cut off.

"It should be borne in mind that nearly all railways are more or less undulating, and only a few lines have very long continuous grades of maximum rise. The result of this is that under usual conditions a locomotive

in freight service is only required to supply the maximum amount of steam for a comparatively short period, and the average consumption of steam over a subdivision is greatly below the maximum requirements.

"A careful consideration of the above facts led us to the decision that it would be unwise to adopt the mikado type with its greater gross weight, higher initial cost and subsequent maintenance while the consolidation type was amply capable of performing the work under our conditions, particularly as the question of employing longer and stronger turntables and increasing the size of roundhouses had to be considered. It is freely admitted that for very high speed service approximating passenger service the mikado type is preferable, on account of greater ultimate boiler pressure, but we do not believe that any considerable portion of the freight in this country is handled under such conditions.

"On the whole our locomotives have shown their ability to furnish all the steam required under all ordinary conditions, and in addition have shown a high efficiency in connection with the consumption of fuel. Reducing the whole proposition to its simplest terms, why should large additional expense be incurred to provide abnormal power that is not required by the service, as conclusively shown by extensive experience?"

## Rogers Pass Tunnel Construction, Canadian Pacific Railway.

Canadian Railway and Marine World for December had, on pg. 537, a progress diagram of the work on this tunnel in the Selkirk Mountains up to Oct. 9, and also particulars of the work up to Oct. 31. Following is the record for construction for November:

East and centre heading, 588 ft., schist with some quartzite.

East and pioneer heading, 529 ft., quartzite with some schist.

West end pioneer heading, 817 ft., slate with small quartzite bands.

West end centre heading 654 ft., slate with small quartzite bands.

The west end pioneer heading footage is believed to be the American record, and was driven down grade through rock that could not be broken over 6 ft. per round. The greatest footage in one day was 37 ft.

The work is in charge, for the contractors, Foley Bros., Welch and Stewart, of A. C. Dennis, M. Can. Soc. C.E., Superintendent, Jos. Murphy, Assistant Superintendent, east end, and Jos. Fowler, Assistant Superintendent, west end.

A notable bridge replacement has been carried out on the Victorian Government Railways, in Australia, at Maribyrnong River bridge, between South Kensington and Footscray, Melbourne. The old bridge consisted of three girders, one heavy middle span and two lighter outside ones; the total length being 216 ft. In 1911 it was determined to do away entirely with the old box girder bridge, by replacing it with a modern lattice girder bridge. There were special reasons which made it necessary to exercise the utmost care in doing the work, the main one being that the bridge carried over 320 trains a day during ordinary traffic conditions. The stoppage of running over the bridge would have meant the cutting off of all the Victorian Railways traffic to the west of the Bendigo lines. No attempt was made to provide any temporary diversion; and, in addition to the total renewal of girders, the line at the bridge had to be lifted 5½ ft. during the progress of the work.



## Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed our paper have a continuous record of the Board's proceedings. No other paper has done this.

The dates given of orders, immediately following the numbers, are those on which the hearings took place, and not those on which the orders were issued. In many cases orders are not issued for a considerable time after the dates assigned to them.

22864. Nov. 12.—Approving Bell Telephone Co.'s agreement with La Compagnie Telephone, St. Paul de Chester, Oct. 27.

22865. Nov. 14.—Authorizing Saskatchewan Highway Commissioners to build highway over G.T. Pacific Branch Lines Co.'s line in Lajord rural municipality 128, and rescinding orders 20402, Sept. 24, 1913, and 20521, Oct. 8, 1913.

22866. Nov. 14.—Authorizing C.P.R. to use bridge 19.5 across Napier St., Iberville, Que.

22867. Nov. 18.—Authorizing C.P.R. to build siding for Gunns, Ltd., West Toronto, Ont.

22868. Nov. 14.—Authorizing C.P.R. and Quebec, Montreal and Southern Ry. to operate over crossing at Iberville Jct., Que., without stopping train.

22869. Nov. 18.—Approving revised location C.P.R. Moose Jaw South Westerly Branch from mileage 37.85 to C.P.R. Weyburn-Stirling Branch at mileage 64.59, Sask.

22870. Nov. 14.—Authorizing G.T.R. to use bridge over public road near C.P.R. station at Ste. Anne de Bellevue, Que.

22871. Nov. 16.—Relieving, until further order, the G.T. Pacific Ry. from erecting fences along right of way at Jarrow station, between Irma and Kinsella, Man.

22872. Nov. 6.—Authorizing G.T.R. to make changes in turntable on Wabash Rd. at St. Thomas, Ont., and approving clearance at turntable; and rescinding order 21544, March 24.

22873. Nov. 16.—Approving Montreal and Southern Counties Ry. standard tariff of rates for carriage of express freight, C.R.C. 3, between Montreal and Longueuil and intermediate points, and rescinding order 15236, Oct. 27, 1911.

22874. Nov. 16.—Approving Bell Telephone Co.'s agreement with La Compagnie de Telephones Electriques de L'Abitibi.

22875. Nov. 14.—Ordering New York Central and Hudson River Rd. to stop three eastern trains at specified times at Highlands and Adirondack Jct., Ont., until further order, and to submit statement of passengers handled to and from these points up to Jan. 31, 1915.

22877. Nov. 17.—Authorizing C.P.R. to use bridges 68.2, 109.26, 24.20 and 117.42, British Columbia Division.

22878. Nov. 20.—Approving C.P.R. plan G-142, Aug. 12, showing minimum clearance for all structures except bridges and those for which special approval of the Board is obtained.

22879. Nov. 19.—Approving location and details of G.T.R. station to be built at St. Lawrence, Ont.

22880. Nov. 16.—Dismissing application of Standard Paint Co. of Canada for reduced rating on prepared roofing in Canadian Freight Classification.

22881. Nov. 14.—Authorizing Lake Erie and Northern Ry., pending installation of interlocking plant, to operate for construction purposes only, between 6 a.m. and 7 p.m., over crossing of G.T.R., Brantford, Ont., interlocking plant to be completed by June 30, 1915, and crossing to be protected by flagmen appointed by G.T.R. at expense of L.E. & N.R.

22882. Nov. 19.—Authorizing C.N. Ontario Ry. to build spur from Lot 3, Con. 4, Darlington Tp., for S.E. Marchmont.

22883. Nov. 20.—Authorizing C.P.R. to operate over crossing of Kingston and Pembroke Ry. by its Glen Tay to Cobourg line, at mileage 24.8.

22884. Nov. 20.—Relieving Windsor, Essex and Lake Shore Rapid Ry. from providing further protection at crossing of Ruthven side road between Lots 10 and 9, Con. 1, Gosfield South, near Ruthven, Ont.

22885. Nov. 20.—Relieving G.T.R. from providing further protection at crossing of highway in Con. 3, King Tp., Ont.

22886. Nov. 20.—Authorizing C.P.R. to use bridge 109.7 over Pitt River, B.C.

22887. Nov. 31.—Authorizing Glengarry and Stormont Ry. (C.P.R.) to operate for construction purposes only for 60 days after installation of diamond, over crossing of G.T.R. near Cornwall, Ont.; trains to be stopped and flagged over by a watchman appointed by G.T.R., at applicant's expense.

22888. Nov. 21.—Approving C.P.R. plan showing interlocking signals to be installed at swing bridge over Chambly Canal, St. John's, Que., mileage 19.9, Farnham subdivision, and authorizing C.P.R. to operate northbound trains over

bridge without first stopping, provided signals are clear.

22889. Nov. 23.—Extending to June 30, 1915, time within which C.P.R. shall complete sidings in Bala, Ont.

22890. Nov. 23.—Authorizing C.P.R. to open for traffic its Swift Current Northwest branch from Westerham, mileage 94 to mileage 110.8, Sask.

22891. Nov. 23.—Extending for two months from Nov. 29, time within which C.N. Ontario Ry. was authorized to use temporary grade on its Montreal-Hawkesbury line, from mileage 46.69 to 48.62, for construction purposes only.

22892. Nov. 21.—Authorizing G.T.R. to build two sidings for the Jencks Machine Co., St. Catharines, Ont.

22893. Nov. 17.—Dismissing complaint of W. J. Guest Fish Co., Winnipeg, Man., in regard to express rate charged on fresh fish, carload lots, Vancouver, B.C., to Winnipeg.

22894. Nov. 21.—Ordering G.T.R. by June 1, 1915, to install improved type of automatic bell at crossing between lots 10 and 11, con. 3, North Orillia, west of Uthoff, Ont., 20% to be paid out of railway grade crossing fund.

22895. Nov. 25.—Approving supplement 4 to Canadian Freight Classification 16, as amended, revised, and resubmitted for approval by G. C. Ransom, Chairman Canadian Freight Association, Nov. 18, to become effective not later than Jan. 2, 1915.

22896. Nov. 25.—Authorizing City of Montreal to open up Park Ave., across C.P.R.; crossing to be protected by gates, operated by day and night watchmen appointed by C.P.R.; company to install gates upon plans prepared and submitted within 30 days from date, 20% of cost to be paid out of railway grade crossing fund, remainder by city, city also to pay cost of maintenance and operation.

22897. Nov. 25.—Amending order 22509, Sept. 5, re alteration of C.P.R. spur, Rachel St. East, Winnipeg.

22898. Nov. 24.—Authorizing C.P.R. to move its standard A-2 station building from Reford to Conquest, Sask., and to place in its stead standard portable station building, partitioned off at one end for freight shed purposes; latter to be erected immediately after removal of the former.

22899. Nov. 25.—Amending order 20383, Sept. 23, 1913, re road diversion by C.P.R., near Leon St., Alex, Alta.

22900. Nov. 25.—Authorizing C.P.R. to lower grade of Maple St., Winnipeg, company to pay for all damage to immigration building and inconvenience to its use resulting from lowering the grade.

22901 to 22904. Nov. 25.—Extending to July 1, 1915, time for approval of C.P.R., Great North Western Telegraph Co., G.T. Pacific Telegraph Co., and White Pass and Yukon Route telegraph tolls.

22905. Nov. 25.—Ordering that all Canadian Northern Ry. passenger trains be flagged over Central Ave., Prince Albert, Sask., two thirds of cost to be paid by C.N.R., balance by city, and rescinding order 19555, June 11, 1913.

22906. Nov. 25.—Relieving Canadian Northern Ry. from speed restrictions on trains from Drumheller to Calgary, Alta., mileage 314.7 to 399.5, from Saskatoon, Sask.

22907. Nov. 25.—Amending order 21571, Mar. 30, 1914, re Canadian Northern Ry. extension to gravel pit spur in McIrvine Tp., Ont.

22908. Nov. 25.—Authorizing C.P.R. to operate over crossing of Calgary Municipal Ry. at Eleventh St. East, without first stopping.

22909. Nov. 25.—Authorizing Town of Tuxedo, Man., to build highway over Canadian Northern Ry., and G. T. Pacific Ry. at Kennaston Boulevard, Winnipeg, and Tuxedo, Man.

22910. Nov. 24.—Authorizing Kettle Valley Ry. to build across public roads, mileage 67.59 and 67.65, west of Penticton, B.C.

22911. Nov. 25.—Approving Dominion Atlantic Ry. revision at Sissiboo River Bridge, Weymouth, N.S.

22912. Nov. 24.—Amending order 22751, Oct. 23, re opening up of certain streets in Montreal across C.N. Quebec Ry.

22913. Nov. 24.—Authorizing C.P.R. and Canadian Northern Ry. to operate over crossing near Rosetown, Sask., mileage 41.4, of C.P.R. Kerobert subdivision, without first stopping.

22914. Nov. 24.—Relieving C.P.R. from speed restrictions on trains over its Bassano-Empress and Swift Current Northwestly branches.

22915. Nov. 25.—Ordering C.P.R., within 30 days, to build transfer track with G.T.R. at Coldwater, Ont., to provide reasonable facilities, and to keep detailed account of expense of putting tracks; C.P.R. to supply bond to cover half cost of construction; such sum, or so much as board may deem proper, to be paid over according to board's direction, and for determination of such sum C.P.R., G.T.R., and Village of Coldwater shall keep account of cars received and shipped over transfer for 12 months following completion.

22916. Nov. 24.—Authorizing C.N. Ontario Ry.

to use bridge over White Creek, mileage 64.9 from Toronto.

22917. Nov. 24.—Authorizing Canadian Northern Ry. to build a spur for T. Jackson & Sons, Marchand, Man.

22918. Nov. 26.—Recommending to Governor in Council for sanction lease of Lake Erie and Northern Ry. by C.P.R., dated Oct. 8.

22919. Nov. 25.—Authorizing Campbellford, Lake Ontario and Western Ry. (C.P.R.) to operate over crossing of Toronto Eastern Ry. at Scugog and Wellington Sts., Bowmanville, Ont., mileage 149.2 from Glen Tay, without first stopping trains.

22920. Nov. 28.—Authorizing C.P.R. to operate bridges, 1.9, 19.1 and 18.8, Eastern Division.

22921. Nov. 26.—Approving Kettle Valley Ry. standard freight mileage tariff, C.R.C. 27, to apply between stations in British Columbia.

22922. Nov. 27.—Authorizing City of Winnipeg to build highway over C.P.R., at Midwinter Ave., Winnipeg.

22923. Nov. 24.—Authorizing Campbellford, Lake Ontario and Western Ry. (C.P.R.) to divert road across its line at mileage 54.99, to take certain lands, to build across road allowance at mileage 54.88, and divert road, Richmond Tp., and rescinding orders 19296, 19360, 21046 and 21158.

22924. Nov. 30.—Authorizing C.P.R. to build its Swift Current Northwesterly Branch at grade across road allowance at mileage 35.33, Cabri, Sask.

22925. Nov. 28.—Approving Erie and Ontario Ry. (T.H. & B.R.) bylaw 3, authorizing F. F. Backus, General Traffic Manager, and Geo. C. Martin, General Freight and Passenger Agent, to prepare and issue tariffs of tolls.

22926. Nov. 30.—Approving plan and specifications of Loughlin Ditch, to be built under G.T.R. in Lots 15 and 16, Con. 5, North Dorchester Tp., Ont.

22927. Dec. 1.—Authorizing C.N. Ontario Ry. to operate trains over crossing of C.P.R. Stobie Branch in Lot 4, Con. 5, McKim Tp., without first stopping, and authorizing C.P.R. to operate its trains at 15 miles an hour.

22928. Nov. 30.—Authorizing C.P.R. to open for traffic its line between Govanlock and Altawan, mileage 307.3 to 314.2, and relieving it from speed limitation of 18 miles an hour from Shaunovan, mileage 230.8, to Govanlock.

22929, 22930. Nov. 28.—Authorizing G.T.R. to build a siding to opposite Stratford Chair Co. premises, Stratford, Ont., and one for Thos. Davidson Manufacturing Co., Montreal.

22931. Nov. 25.—Authorizing Canadian Northern Ry. to build spur for Slocum Howland Coal Properties, Secs. 9, 8 and 7, Tp. 29, R. 20, w. 4 m., Alta.

22932. Nov. 30.—Approving location of G.T.R. station in Norwich, Ont., and authorizing it to build additional track across Main St.

22933. Nov. 30.—Authorizing Bank of Hochelaga, Winnipeg, to repay to Local Treasurer C.P.R. at Winnipeg \$750 deposited to credit of Board, with accrued bank interest, if any, in connection with spur for the B. Shragge Iron and Metal Co., Ltd.

22934. Nov. 30.—Ordering Quebec Oriental Ry. and Atlantic, Quebec and Western Ry. to provide separate lavatory accommodation on each of their first class cars; work to be completed by May 1, 1915.

22935. Nov. 30.—Relieving G.T.R. from providing further protection at crossing of public highway near Highborough, Ont.

22936. Dec. 2.—Ordering Great Northern Ry. to build pedestrian subway at Cox St., Fernie, B.C., with headroom 7½ ft., width 8 ft.; cost to be paid equally by G.N.R. and the city.

22937. Dec. 2.—Amending order 22826, Nov. 4, re Sudbury-Connor Cliff Suburban Electric Ry. crossings of C.P.R. in Sudbury, Ont.

22938. Dec. 1.—Authorizing Alberta Public Works Department to build highway crossing over C.P.R., in S.E. ¼ Sec. 12-8-5, w. 5 m.

22939. Dec. 2.—Authorizing C.N. Ontario Ry. to use bridge over diverted road in Lot 12, Con. 4, Scarborough Tp., Ont.

22940. Dec. 2.—Extending to June 1, 1915, time within which G.T. Pacific Ry. shall complete standard 1A station, with 60 ft. platform at point between Tofield and Deville, Alta., at milepost 759, and spur to hold at least 4 freight cars, provided it immediately place temporary shelter there to protect those waiting for trains.

22941. Dec. 2.—Authorizing C.N. Ontario Ry. to carry passenger traffic between North Bay and Capreol, Ont., until July 1, 1915.

22942. Nov. 30.—Approving location of G.T. Pacific Ry. standard no. 1 station at Hansard, B.C., mileage 1233.3 west of Winnipeg.

22943. Dec. 2.—Authorizing C.P.R. to build its Weyburn-Stirling Branch at grade across 46 highways, mileage 316.77 to 361.61, and to divert highways at mileage 356.10 and 360.53.

22944. Nov. 28.—Approving location of Esquimalt and Nanaimo Ry. station at Palmer, B.C., without prejudice to any rights British Columbia Government may have in Island highway.

22945. Dec. 2.—Amending order 22751, Oct. 23, 1914, re opening up of certain streets in Montreal across C.N. Quebec Ry., and rescinding order 22912, Nov. 24.

22946. Nov. 20.—Apportioning cost of main-



taining watchman at G.T.R. crossing, Windsor Mills, Que., as provided for by order 12917.

22947. Dec. 3.—Rescinding orders 22058 and 22254, June 25 and July 16 respectively, and authorizing Campbellford, Lake Ontario and Western Ry. (C.P.R.) to build its Trenton business spur across Sopina and Marmora Sts., and diverting Bodge, Eugenia, Louisiana, Elizabeth and Leopold Sts., Trenton, Ont.

22948. Dec. 1.—Amending order 22741, Oct. 21, re highway over Canadian Northern Ry. north of Sec. 3, Tp. 29, R. 29, w. 3 m., Sask.

22949. Dec. 3.—Approving Canadian Northern Ry. Standard Passenger Tariff, C.R.C., no. E. 488, between stations east of and including Port Arthur, Ont., in Ontario and Quebec, on basis of 3c a mile.

22950. Dec. 4.—Ordering Canadian Northern Ry. to complete work of diverting Rue la Verandrye, St. Boniface, Man., as authorized under order 20808, Nov. 13, 1913, by June 1, 1915.

22951. Dec. 2.—Authorizing Alberta Public Works Department to construct highway over Canadian Northern Ry. in n $\frac{1}{2}$  Sec. 19-53-16, w. 4 m.

22952. Nov. 17.—Authorizing Campbellford, Lake Ontario and Western Ry. (C.P.R.) to take certain lands in Belleville, Ont., in connection with team yard; to close Dundas St. between Norfolk and King Sts., and divert it to Brock St. by way of Norfolk and Willard Sts.; Willard St. be widened to 66 ft.; to close Mary and James Sts., between Dundas St. and C.N. Ontario Ry. right of way, and divert traffic by grade level highway crossing near King and Water Sts.; question of providing protection at crossings reserved.

22953. Dec. 2.—Approving agreement between Bell Telephone Co., and La Compagnie Telephone Local de Ham Nor, Nov. 8.

22954. Dec. 2.—Approving C.N. Ontario Ry. plan, Montreal, Aug. 29, showing revision in grades on its line and C.P.R. between Dufferin Road and Dufferin St., North Toronto, Ont.

22955. Dec. 4.—Approving Halifax and South Western Ry. standard freight mileage tariff, C.R.C. no. F-1, on general merchandise in absence of special or other tariffs giving lower rates.

22956. Dec. 1.—Approving Lake Erie and Northern Ry. plan showing proposed protection fences at crossing of River Road, mileage 1.02.

22957. Dec. 5.—Authorizing Hamilton St. Ry. to build across G.T.R., on Kenilworth Ave., Barton Tp., Ont., by subway, having clear headroom of 14 ft.; authorizing City of Hamilton to cut grade of street to 3%, instead of 5%; extra cost to be paid by city; G.T.R. to pay extra cost of widening subway to accommodate any greater number of tracks than 4 it may desire to build; provided total right of way of G.T.R. shall not exceed 100 ft.; 20% of cost, not exceeding \$5,000, of subway to be paid out of railway grade crossing fund; balance, 7 $\frac{1}{2}$ % by Barton Tp., 32 $\frac{1}{2}$ % by G.T.R., 25% by city, and 35% by Hamilton St. Ry.

22958. Dec. 2.—Amending order 22624, Nov. 4, re G.T. Pacific Ry. crossing of Fort William Electric Ry. on Empire Ave., Fort William, Ont.

22959. Dec. 5.—Authorizing C.P.R. to operate bridges 113.1, 0.16 and 49.8, Sherbrooke, Farnham and Orford Subdivisions, Que.

22960. Dec. 5.—Authorizing C.P.R. to operate bridge 19.8 over Chambly Canal, at St. Johns, Que.

22961. Nov. 30.—Approving proposed deviation of G.T.R. through Thorold, Ont.; and authorizing G.T.R. to build along and across 15 highways; and under Niagara, St. Catharines and Toronto Ry., near Welland and Richmond Sts., latter to be carried over G.T.R. by overhead bridge, now building by Railways and Canals Department; and approving location of G.T.R. station at Welland, Ont.

22962. Dec. 4.—Approving Halifax and South Western Ry. Standard Passenger Tariff, on uniform basis of 3c per mile, C.R.C. P-1.

22963. Dec. 4.—Re freight tariffs on building brick. This order is given fully under "Traffic Orders by Board of Railway Commissioners" on another page of this issue.

22964 to 22968. Dec. 3.—Authorizing Ontario Hydro Electric Power Commission to erect wires across railways at Welland, Paris, Embro, Fergus and Etobicoke Tps., Ont.

22969. Dec. 7.—Approving location of G.T. Pacific Branch Lines Co. station at Domremy, Sask.

22970. Dec. 5.—Ordering that G.T. Pacific Ry. stations to be built at Engen, Otway, McCall, Sheraton, Hulatt, Bednost, Miworth and Tintagel, B.C., locations of which were approved by order 22769, Oct. 27, be of standard no. 1 plan.

22971. Dec. 4.—Ordering C.P.R. by June 1, 1915, to install improved type of automatic bell at crossing of highway, mileage 60.09, Eldon Tp., Ont.

22972. Dec. 7.—Approving location of G.T. Pacific Ry. station at Nichol, mileage 438.3, Prince Rupert East, B.C.

22973. Dec. 7.—Ordering changes in express merchandise receipts, relating to shipments of specie, valuable documents, letters for mailing from other points, and relating to limitation of liability. This is given fully on another page under "Among the Express Companies."

22974. Dec. 7.—Ordering C.P.R. forthwith to cancel embargo placed against traffic for delivery on its team tracks at Mile End, Montreal.

22975. Dec. 10.—Dismissing application of American Coal and Coke Co.'s, Detroit, Mich., for order disallowing note 3 to rule 1, page 7, of M.C.R. Tariff C.R.C. 2171.

22976. Dec. 10.—Establishing Dominion Ex. Co.'s collection and delivery limits in Jerome, Que.

22977. Dec. 5.—Authorizing C.P.R. to build its Moose Jaw Southwesterly Branch, at grade, across street at Reycrest, Sask.

22978. Dec. 10.—Approving C.P.R. Plan B-1-1417, Oct. 8, showing details of bridge to be built over Muskrat River at Meath, Ont.

22979. Dec. 9.—Authorizing C.P.R. to close its station at Clanwilliam, B. C.

22980. Dec. 9.—Authorizing Campbellford, Lake Ontario and Western Ry. (C.P.R.) to build branch or Y at mileage 15.41, Havelock Subdivision, Ont., per T. R. Sharpe.

22981. Dec. 10.—Authorizing G.T.R. to build siding for Horn Bros., Lindsay, Ont.

22982. Dec. 7.—Approving plan and specifications of Jewell award drain along G.T.R. lands in Harwich Tp., Ont.

22983. Dec. 10.—Authorizing C.P.R. to remove its agent at Bonheur station, Ont., and ordering C.P.R. to have waiting room kept heated for arrival of local trains, and shipment of package freight.

22984. Dec. 5.—Authorizing C.P.R. to build extension to siding for Wallace and Robinson, Waterloo, Que.

22985. Dec. 15.—Recommending to Governor in Council for sanction, amalgamation agreement between Toronto, Hamilton and Buffalo Ry. and Erie and Ontario Ry., Nov. 11.

22986. Dec. 15.—Ordering C.P.R. to appoint watchman at crossing of Twelfth St. East, Calgary, Alta., to be on duty between 8 a. m. and 7 p. m., city to have right at any time to submit any further scheme of protection, if it so desires; after watchman has been installed, C. P.R. to be relieved from speed limitation of 10 miles an hour over crossing.

22987. Dec. 15.—Extending for 30 days from date, time within which G.T.R. shall build siding for Chatham Bridge Co., Chatham, Ont.

22988. Dec. 14.—Ordering C.P.R. to continue station agent at Mazeppa, Alta.

22989. Dec. 17.—Suspending, pending hearing and determination by Board, Supplement 2 to C.P.R. Joint Tariff C.R.C. no. W. 1890, to take effect Jan. 1, 1915.

22990. Dec. 16.—Authorizing G.T.R. to take certain additional lands in Callander, Ont., for widening Main St.

22991. Dec. 17.—Establishing express delivery limits in Lacombe, Alta.

22992. Dec. 17.—Authorizing Saskatchewan Highway Commissioners to build, highway crossing over Canadian Northern Ry. right of way at Brock, Sask.

22993. Dec. 14.—Authorizing Canadian Northern Ry. to cross and divert road between Secs. 12-6-20, and 7-6-19, w. 2 m., Sask.

22994. Dec. 18.—Approving revised location of Kettle Valley Ry. through Hope, B.C., from station 1920 to 2010, west of Coquihalla Summit.

22995. Nov. 23.—Ordering G.T. Pacific Ry. to maintain station on south side of main line, opposite land between Oak St. and Ash St., shown on plan of townsite of Prince George, B.C.; and to file with board by Jan. 15, 1915, detail plans for approval; station to be built by June 1, 1915; and rescinding orders 18902, March 20, 1913, and 19347, May 14, 1913.

22996. Dec. 15.—Approving C.P.R. clearances of telegraph poles along South Bank Branch of Lachine Canal, on St. Patrick St., Montreal.

22997. Dec. 17.—Approving location of C.P.R. station at Kaslo, B.C.

22998. Dec. 15.—Approving C.P.R. plan of interlocking plant at swing bridge over Lachine Canal, mileage 43.1, Farnham Subdivision, Que.

22999. Dec. 15.—Relieving C.P.R. from providing further protection at crossing of highway, mileage 76, east of Leduc, Alta.

23000. Dec. 14.—Relieving C.P.R. from speed limitation of 18 miles an hour over its Weyburn Westerly Branch from Assiniboia, mileage 112, to Woodrow, mileage 145.7; and of 25 miles an hour from Woodrow to Shaunavon, mileage 145.7 to 230.8.

23001. Dec. 14.—Authorizing Canadian Northern Ry. to carry traffic over its line from Inwood to Hodgson, Man., until July 15, 1915; speed of trains to be limited to 12 miles an hour.

23002. Dec. 15.—Authorizing C.P.R. to open for traffic its Moose Jaw Southwesterly Branch from Expanse, mileage 35.0 to mileage 50.0, Sask.; and relieving company from speed limitation of 15 miles an hour from Moose Jaw to Expanse, mileage 0 to 35.0.

23003. Dec. 11.—Authorizing C.N. Manitoba Ry. to open for traffic its line from Deerfield Jct. to Steel Rock, Man., 12 $\frac{1}{2}$  miles; speed of trains limited to 20 miles an hour.

George Higgs, switchman in the C.P.R. service at Toronto, was fined \$50 and costs or 6 months in jail for being drunk on duty recently.

## Railway Rolling Stock Notes.

The G.T.R. has received 7 first class cars from Canadian Car and Foundry Co.

The Acadia Coal Co. has ordered 250 all steel mine cars from Eastern Car Co., New Glasgow, N.S.

The Central Vermont Ry. has ordered 3 ten wheel locomotives from American Locomotive Co.

The Russian Government is reported to be ordering locomotives on this continent for prompt delivery. It is stated that an order for 30 has been secured by the Lima Locomotive Co., Lima, Ohio.

The National Steel Car Co., Hamilton, Ont., has, according to press reports, received orders for a number of cars for a French railway, and also orders from the British and French war offices.

The Board of Railway Commissioners has issued an order directing the Quebec Oriental Ry. and Atlantic, Quebec and Western Ry. to provide separate lavatory accommodation on each of their first class cars.

The C.P.R., between Nov. 15 and Dec. 15, ordered 8 all steel second class cars, 6 all steel 60 ft. mail cars, and 8 class D4 locomotives, from its Angus shops, Montreal.

The New Ladysmith Lumber Co., Nanaimo, B.C., has received a 2-4-2 saddle tank locomotive, details of which were given in our last issue, from Canadian Locomotive Co.

The Greater Winnipeg Water District Commissioners have invited tenders to Jan. 20, for gravel pit excavation, screening, elevating and crushing machinery, and for locomotives and cars for pit and other railway service.

The Chicago, Milwaukee and St. Paul Ry. has ordered 12 260 ton double unit, 4-4-4-0-0-4-4 electric locomotives from the General Electric Co., for delivery by Oct. 1, for use on the Rocky Mountain Division, which is to be electrified.

With reference to rolling stock orders placed for the Intercolonial Ry., mentioned in our last issue, we have been officially advised that 250 steel gondola cars, 50 tons capacity, have been ordered from Eastern Car Co., and 200 steel frame flat cars from Nova Scotia Car Works.

The Quebec Central Railway is not building 2 American (4-4-0) locomotives in its shops at Sherbrooke, as mentioned in a press report quoted in our December issue. We are officially advised that the report may have arisen from the fact that the company equipped 2 of its existing locomotives with superheaters some little time ago.

The C.P.R., between Nov. 15 and Dec. 15, received the following additions to rolling stock:—52 steel frame box cars, 35 refrigerator cars, 2 single track flangers, 9 flat cars, from its Angus shops, Montreal; 19 ore cars from National Steel Car Co., and 1 double track snow plough and 3 single track snow ploughs from Canadian Car and Foundry Co.

Locomotive men have, according to an Ottawa press dispatch, asked the Minister of Labor for legislation limiting the time they can be kept continuously on duty to 16 hours, and for a Dominion workmen's compensation law applicable to all railway employees.

The Lehigh Valley Rd.'s new freight terminal at Buffalo, N.Y., requires the demolition of 30 buildings on the quarter mile square purchased recently by the railway for \$1,200,000. Most of the buildings are small frame stores and dwellings, and their demolition is under way.



## Railway Development.

### Projected Lines, Surveys, Construction, Betterments, Etc.

**Alberta and Great Waterways Ry.**—Tracklaying was reported completed to mileage 65, Nov. 30. (Dec., 1914, pg. 544.)

**Burrard Inlet Tunnel and Bridge Co.**—The directors had a conference with the Provincial Government at Victoria, B.C., Dec. 2. R. Modjeski, the Consulting Engineer, whose report on the bridge designs, was referred to in our last issue, had a consultation with the directors previously and strongly emphasized the necessity for having new plans made and new tenders invited. The directors will take no action pending the decision of the Government, which it is expected will be announced early in February. The directors desire to complete arrangements for the immediate construction of the bridge. (Dec., 1914, pg. 542 and pg. 544.)

**Athabasca Northern Ry. Co.**—The Dominion Parliament is being asked to authorize the continuance of this company's corporate existence, and to grant an extension of time for building the projected line from Edmonton to Athabasca Landing, Alberta. The provisional directors named in the act of incorporation, chap. 57, statutes of 1905, were F. H. Markey, Montreal; J. K. McKenzie, Selkirk, Man.; O. E. Fleming, Windsor, Ont.; M. Burton, Barrie, Ont. (May, 1913, pg. 219.)

**Dominion Government Railway to Hudson Bay.**—We are officially advised that up to Dec. 4 165 miles of track had been laid on the railway under construction from Pas to Port Nelson, Man., and that tracklaying was being continued. Grading has been carried on during the season as far as mile 293, and it was expected to have all the grading connected up as far as mile 242 by Dec. 31, 1914. The telegraph line has been finished to mile 175, and standard water tanks erected to mile 159. The first crossing of the Nelson River is at mile 242, and will be a steel structure of over 500 ft. long. The second crossing of Nelson River will be at mile 332, and will be a steel structure of over 600 ft. long. Very little work has been done in the terminal yard at Pas, or at the first divisional point, mile 157, on account of all energies having been devoted to getting grading and tracklaying advanced. The general progress made, however, has been good. J. W. Porter, Winnipeg, is Chief Engineer. (Dec., 1914, pg. 544.)

**Edmonton, Dunvegan and British Columbia Ry.**—Tracklaying was reported to have been completed to mile 230, Dec. 1, and was expected to reach Big Smoky River, mile 290, by Dec. 31. Press dispatches, Dec. 12, stated that tracklaying would not reach beyond McLennan, mile 260, by the end of the year. W. J. Pace, Superintendent of Construction, left Edmonton, Alta., Nov. 30, to look after the starting of work on the 65 mile section from Big Smoky River to Spirit River. Surveys are being made for the extension of the line from Spirit River to the Alberta-British Columbia boundary, 64 miles, where a junction is to be effected with the Pacific Great Eastern Ry. (Dec., 1914, pg. 544.)

**Erie and Ontario Ry.**—Tracklaying has been completed from Smithville, on the Toronto, Hamilton and Buffalo Ry., to Dunnville, Ont., 14.9 miles. It is intended to continue the line from Dunnville to Port Maitland, Ont., 3.12 miles. Construction on this extension will, it is expected, be started early in the spring. Surveys have been completed, and it is reported that the right

of way has been acquired. The company has been amalgamated with the Toronto, Hamilton and Buffalo Ry., and the line will be operated by that company. R. L. Latham, Hamilton, Ont., is Chief Engineer. (Dec., 1914, pg. 544.)

**Esquimalt and Nanaimo Ry.**—The Esquimalt, B.C., City Council is applying to the Board of Railway Commissioners for an order directing the company to extend its line from the present station to the centre of the town. The present station is a considerable distance from the business centre, and this is claimed to be a great inconvenience, owing to the increasing trade. (Sept., 1914, pg. 418.)

**Glengarry and Stormont Ry.**—Tracklaying on this line from the C.P.R. at St. Polycarpe Station, Que., with Cornwall, Ont., was completed Nov. 30, and the event was celebrated by a dinner in Williamstown, Dec. 2, at which C. L. Hervey, the principal promoter of the railway, was the chief guest. The line is 28 miles long, and passes through St. Telesphore, Bridgend and Williamstown. The contractor for the grading, tracklaying, etc., was the Glengarry Construction Co., Montreal, and A. A. Mellor was the Chief Engineer. The C.P.R. financed the construction of the line and will operate it. (Dec., 1914, pg. 544.)

**Hudson Bay, Peace River and Pacific Ry.**—The Dominion Parliament is being asked for an extension of time for the building of this projected railway from Winnipeg to Hudson Bay and thence westerly to the Pacific Coast, and to change the name to Winnipeg and Hudson Bay Ry. Lewis and Smellie, Winnipeg, Man., solicitors for company.

A deputation from the company waited on the Transcona, Man., Town Council, Nov. 28, to discuss the erection of shops for the projected line. Two routes were, it was stated, under consideration, and before deciding which to adopt, the company desired to know if Transcona would assist the company by voting a bonus. The company suggested a grant of 120 acres, on which to erect shops. Messrs. Brown and Armstrong, in stating the case for the company, said it was proposed, if arrangements could be completed, to build 65 miles of line during 1915, and that the first unit of the shops would involve the expenditure of \$100,000. The matter is under consideration. (Mar., 1914, pg. 121.)

**Huntingdon and Hemmingford Ry.**—Application is being made to the Quebec Legislature for an extension of time for building the authorized line from Huntingdon to Hemmingford, and to the International boundary line between Lacolle, Que., and Rouse's Point, N. Y., where the Delaware and Hudson Ry. crosses. (Feb., 1913, pg. 83.)

**Intercolonial Ry.**—The Minister of Railways, who was in Levis, Que., on his way back to Ottawa from a brief inspection over the line, accompanied by F. P. Gutelius, General Manager, is reported to have stated that a new and enlarged station will be built there to restore the one destroyed by fire, Nov. 24. It is proposed to build the new station on the town side of the tracks, and to connect it by a viaduct with the ferry landing, so that passengers may pass between the station and the ferry without having to cross the tracks as at present.

The City Council of Truro, N.S., is asking the Government to build a subway at the station to permit citizens to reach the park

without having to cross the tracks. The Minister during his inspection suggested that the subway be built at Yonge St., and that the city pay a part of the cost.

Questions concerning the reduction of gradients, and the building of second track at various points were looked into during the inspection, and the Minister stated that these matters would be fully considered before any decisions were arrived at. (Dec., 1914, pg. 531 and pg. 544.)

**Klondike Mines Ry.**—The Yukon Gold Mining Co. is applying to the Board of Railway Commissioners for an order directing the K. M. Ry. to elevate its tracks over several creeks, so as to allow hydraulic mining operations to be carried on. The K. M. Ry. contends that to do this would be detrimental to mining business further north, and that it might as well go out of business. The matter came before the board Dec. 1, and is under consideration. (July, 1912, pg. 339.)

**Moncton and Buctouche Ry.**—Press reports state that surveys have been made for an extension of the line from the present terminus at Buctouche to the Intercolonial Ry. at Loggieville, N.B., 65 miles. We stated in our issue of Jan., 1914, on official advice, that the preliminary surveys for this line were being made by the Moncton and Northumberland Strait Ry., which had been incorporated under a Dominion charter to build this and other lines, and to take over the M. and B. Ry. Although the same interests, to a large extent, own the two companies, we were advised in May, 1914, that the amalgamation had not taken place. E. G. Evans, Hampton, N.B., is associated with both companies. [See also Moncton and Northumberland Straits Ry.] (Dec., 1914, pg. 544.)

**Moncton and Northumberland Strait Ry.**—The Dominion Parliament is being asked to extend the time within which the projected railways from Buctouche to Richibucto Harbor, N.B., from Richibucto to Chatham or Loggieville, N.B.; from Painsec Jct. to Cape Tormentine, N.B., and from Westport to Coleman, P.E.I., may be built. The company has power to operate a car ferry from Cape Tormentine to Westport, and is authorized to amalgamate with the Moncton and Buctouche Ry. (Dec., 1914, pg. 544.)

**Pacific Great Eastern Ry.**—It was reported, Dec. 5, that a train service would be put in operation on the line from Squamish, B.C., to the head of Anderson Lake, 85 miles, Dec. 15, an extension of 27 miles beyond Pemberton, to which point a train service had previously been operated. Track is reported to have been laid to Lillooet 120 miles from Squamish, and it is expected to have this additional 35 miles ready for operation in February. Between Lillooet and Fort George, 317 miles, grading is reported to be approaching completion. Grading of one section has been completed to Horse Lake Summit, 250 miles from Squamish, and another section of 30 miles has been completed south of Fort George. On the intervening section of 167 miles, about 78% of the grading has been completed. With the exception of one section, on which there is some heavy work to be done, the grading is expected to be completed by the end of February and the last section in June.

J. W. Stewart, President, after completing a trip of inspection over the line, is reported to have said that surveys had been completed for the extension of the line from Fort George to the Peace River Valley, where connection would be made with the Edmonton, Dunvegan and British Columbia Ry. and the Canadian Northern Ry. The company, however, was not yet ready



to proceed with construction on this section of the line.

F. G. Gamble, Chief Engineer of the British Columbia Railways Department, in a report on the progress of construction, confirms the figures mentioned above, and gives the following additional details:—A temporary bridge has been erected at Anderson's Creek on the Lillooet River, which will be replaced by a steel one, when the Dominion Government has decided whether it will contain a movable or a fixed span. Between Lillooet River and Anderson Lake there will be two truss bridges, one over Oriole Creek, with a 100 ft. span, and the other over Birkenhead River, with a 125 ft. span, between trestle work. Temporary bridges are being erected. There are several small bridges to be built between Anderson Lake and the Fraser River. Between Squamish and Pemberton Meadows, 39,877 lineal feet of side tracks and sidings have been put in, and ballasting is being carried on. The track laid is in excellent shape. (Dec., 1914, pg. 544.)

**Pacific, Peace River, and Athabasca Ry.**—C. F. Law, Vancouver, B.C., who is the local representative of this British company, is reported to have stated that the location survey for the first section of this projected railway from the Pacific coast at the Maas River to the Groundhog coal district, B.C., had been completed. He went to London, Eng., early in December to report progress to the company, and possibly to make arrangements for starting construction in the spring. [See also Peace River Tramway and Navigation Co.] (Dec., 1914, pg. 544.)

**Peace River Tramway and Navigation Co.**—This undertaking is part of the plan of the company proposing to build the Pacific, Peace River, and Athabasca Ry. C. F. Law, Vancouver, B.C., the local representative of the company, is reported to have said the railway and tramway companies would open up for navigation about 2,500 miles of waterways, by way of Slave Lake and Mackenzie River to the Arctic Ocean. Plans for the boats have been prepared. They are of the shallow draft Mississippi River type, and will cost about \$50,000 each. Tramway boats will give connection at certain points on the route where rapids intervene. (Sept., 1914, pg. 419.)

**Prince Edward Island Ry.**—Press reports state that owing to the Armstrong, Whitworth plant at Elswick-on-Tyne, England, having been taken over by the British Government for war purposes, it is doubtful whether the car ferry under construction for the Carleton Point-Cape Tormentine route will be completed according to contract. The terminals on the island and in New Brunswick are approaching completion. In connection with the ferry it is proposed to standardize the gauge of the railway on the island, on work which it is expected to put in hand this year. No decision will be rendered on this matter until the railway estimates are prepared for Parliament. (Dec., 1914, pg. 544.)

**Winnipeg.**—The commissioners of the Greater Winnipeg Water District have authorized the Northern Construction Co. to build a spur line to a gravel pit, for construction and other purposes, and the purchase by tender of rolling stock for the operation of the line.

The Fire, Water, and Light Committee of the Winnipeg City Council has authorized the preparation of plans for the building of an overhead bridge over the Lee River, seven miles from Lac du Bonnet, on the railway to the city's power plant. The estimated cost is \$20,000. The bridge is to replace an old structure, which is not strong enough for the present traffic. (Dec., 1914, pg. 545.)

## The West's Great Tribute to George Bury.

Shortly before leaving Winnipeg for Montreal to take up his new duties as Vice President of the Canadian Pacific Ry., with jurisdiction over the entire system, George Bury, who for several years past has been Vice President at Winnipeg, in charge of Western Lines, was entertained at dinner at the Royal Alexandra Hotel, on Dec. 4, the gathering being representative of the whole of Western Canada, and embracing over 400 of its leading citizens. Mayor Deacon, of Winnipeg, was in the chair, and the other speakers, all of whom paid high tributes to the great work Mr. Bury has accomplished in the west, and of the public confidence in him, were Hon. R. Rogers, Minister of Public Works; Sir Rodmond Roblin, Premier of Manitoba; Premier Scott, of Saskatchewan, and Premier Sifton, of Alberta; D'Arcy Scott, Assistant Chief Railway Commissioner; D. B. Hanna, 3rd Vice President Canadian Northern Ry.; Morley Donaldson, Vice President and General Manager, Grand Trunk Pacific Ry.; the Mayors of Fort William, Regina and Calgary; the Presidents of the Winnipeg, Medicine Hat and Lethbridge Boards of Trade, and Grant Hall, who succeeds Mr. Bury at Winnipeg.

In responding to the welcome given him, Mr. Bury, as reported, expressed appreciation of the reception, which he took to be an indication of the friends the railway had made, stating that to be successful a railway must be so managed as to be fair to the three great interests involved—the public, the employees and the owners. He attributed his advancement to having started under that master railway executive, Sir Thos. Shaughnessy, and always having his sympathetic guidance, also to capable, loyal, zealous men working with and for him, the friendship of the patrons of the road and the consideration given his efforts by the press. He paid a fitting tribute to the memory of the late Sir William Whyte, and announced that Grant Hall would be his successor in Winnipeg, stating the large part that official had had in the operations of the road. He referred to the progress the west had made, and begged that they should be not carried away by the high prices of grain that are certain to obtain for at least the next two years, pointing out that conservation of the soil through mixed farming is all that is necessary for a permanent, continued progress. The new start of this he predicted, would be not later than next fall. He pointed out that exclusive grain growing, with the consequent marketing, in a few months depressed the price, while the moving of a vast traffic, in so short a time, necessarily threw many men out of employment for long periods. Prosperity and unemployment did not go hand in hand. He advised the well to do to take up scientific farming, saying, "There may not be as much fun in it as in playing golf, but there is at least as much exercise, and that is the reason generally given for the game." He made a plea for closer relations between the east and the west, asking that we think as Canadians instead of sectionally. To this end he advocated that the governments should subsidize a telegraphic news service, and thus enable western papers to print more news of the empire and Canada generally. In conclusion, he made a feeling reference to Winnipeg and the west, and said that both he and Mrs. Bury would look forward to their periodical visits to Winnipeg as visits home.

Grant Hall was the last speaker of the evening, and made a decided impression by his clear cut businesslike remarks. He said it would take more eloquence than he possessed to show his appreciation for the

friendly spirit in which they had received the announcement with regard to himself. Vice President Bury had set a very hard pace for him, and would still be the pace maker—still hold the watch. However, he would personally leave nothing undone in his efforts to make things go as smoothly as they had done in the past. He said that he felt it an honor that the chief executive of the railway in the west should receive such a compliment as had been tendered to Mr. Bury, by such a magnificent dinner. It was a compliment such as no railway man had ever received in Western Canada. He was proud of the fact that the company had selected Mr. Bury to fill such an important position. If he undertook to say what he proposed to do in the future he would be like the man in a story he quoted who purchased a fine yacht, the main attraction of which was its unusually loud whistle. When the engineer was ordered to proceed he could not do so because all the steam was exhausted in blowing the whistle.

## Canadian Northern Railway Contractors Suits.

A lien of claim has been filed in the registry office at Sudbury, Ont., by Foley, Welch and Stewart and the Northern Construction Co., against the Canadian Northern Ontario Ry.'s lands, the claim being \$4,276,000, for work done and material supplied up to Dec. 3, 1914, for Mackenzie, Mann & Co., Toronto, and the British Empire Trust Co., London, Eng. The lien is filed under the Mechanics' Lien Act of Ontario on behalf of the contractors for the section of the line from Port Arthur easterly to Ruel, Ont. It is stated that differences have arisen between Mackenzie, Mann & Co., who were the general contractors for building the line, and the plaintiffs who actually did the work, as to the classification of materials, and that in order to bring about a settlement the plaintiffs have filed a general lien on the company's property and lands. Mackenzie, Mann & Co. claim that Foley, Welch and Stewart have been paid in full and that there is nothing owing to them.

Action has been taken at Calgary, Alta., against Mackenzie, Mann & Co., the Northern Construction Co., and the Canadian Northern Ry., by Phalen, Shirley and Co., who claim between \$300,000 and \$400,000 and interest. The plaintiffs had subcontracts on the main transcontinental line west of Edmonton, and allege that the various sums were not paid as they became due under the agreements.

**The Safety First Propaganda.**—G. Bradshaw, who is in charge of the safety first work on the G.T.R. and G.T. Pacific Ry., has issued a booklet entitled "Fred Warren," which contains the personal narrative of a boy of that name who lost a leg through "hopping" cars in a freight yard. To this narrative is added a few words by a school teacher, Miss Hudson, showing how safety first facts can be taught in connection with the regular history and geography lessons in school. The booklet can be had at a special price for distribution, and at 30 cents a single copy, from G. Bradshaw, Highland, N. Y.

**The Northern Pacific Ry.** has paid the New Westminster, B.C., city council \$25,000 as the first instalment on account of rentals for the water front property leased for terminal purposes. The company may take possession of the property any time up to July 1, 1916, when a further payment of \$27,000 is to be made.



## Interstate Commerce Commission Authorizes Increased Freight Rates in Eastern Territory.

The Interstate Commerce Commission of the United States gave a decision on Dec. 18, which is of the greatest importance to railways in eastern U. S. territory and through them to the business community generally. The decision, from which Chairman Harlan and Commissioner Clements dissented grant increases as explained below:

With the exception of lake and rail traffic, coal, coke, iron ore and certain other traffic, upon which the commission has affixed rates adjudicated reasonable all the railway systems operating between the Atlantic seaboard and the Mississippi, north of Potomac and Ohio rivers, were allowed the flat 6% increase for which they have been asking during the last four years. The roads hoped to get increases which would add to the annual revenue some \$50,000,000. The commission's decision is expected to give them additional revenue approximating \$30,000,000.

The roads east of a north and south line drawn through Buffalo, Pittsburg and Charleston, W. Va., won by the decision, the increases, other than upon the traffic excepted, which were denied them in the commission's decision last August. The roads west of this line, which got partial advances in the August decision, received further advances, so that now, all the roads in what is described as official classification territory will enjoy uniform advances in both class and commodity rates.

In administration circles at Washington the outcome of the case was welcomed as a development which would hasten and support the expected general business revival. President Wilson issued no formal statement, but White House officials said he was greatly pleased and expected the decision to have an immediate effect upon the country's economic situation. The President had made no secret of his belief that improvement of conditions generally was dependent, to an extent, at least, upon additional revenue being provided in some way for the railroads.

Traffic on which no increase was allowed by the commission represents about 55% of the entire volume of freight handled by the roads. Coal, coke and iron ore, however, are bulky commodities, taking low rates. Consequently the amount of revenue derived from them is relatively small. In the eastern district 10% of the entire volume of freight is anthracite, 31% bituminous coal, 6% coke and 5% ores. The coal roads, in the opinion of the commission, are already profitable.

In its decision the majority held that the roads had established in the latest hearings a greater need of additional net income than ever before. This was due, in part, to the war in Europe and, in part, to the already existing necessity, in the judgment of the commission, for additional revenues to maintain the railroad properties.

### Text of the Decision.

Following is the decision of the majority of the commission: "These cases were originally submitted in May, 1914, and decided on July 29, 1914. Upon petition of the carriers filed Sept. 15 the Commission, on Sept. 19, ordered that further hearing in said cases be granted; the hearing to be limited to presentation of facts disclosed and occurrences originating subsequently to the date upon which the records previously made in these cases were closed. Under these limitations hearing was had before the Commission continuously for five days, ended Oct. 23. Evidence was introduced by car-

riers, investment bankers, and various protestants. Some of the exhibits supplemented those offered at the original hearing. The cases were argued before the Commission on Oct. 29 and 30, and thereupon submitted.

"It is not necessary to make any extended summary of the conclusions contained in the Commission's original report. Among other things, it found that in view of a tendency toward a diminishing net operating income, as shown by the facts described, we are of opinion that the net operating income of the railways in official classification territory, taken as a whole, is smaller than is demanded in the interests of both the general public and the railroads; and it is our duty and our purpose to aid, so far as we legally may, in the solution of the problem as to the course that the carriers may pursue to meet the situation.

"The Commission did not acquiesce in the carriers' proposal of a general increase as indicated in the tariffs filed by them, but suggested various methods by which they might properly conserve their revenue. In central freight association territory, however, by reason of the low general level of rates there found to prevail and also by reason of the financial necessities of the carriers in that territory, intraterritorial increases of approximately 5% were permitted, except on certain articles, mainly heavy lowgrade commodities. It was suggested in view of the modifications required in the tariffs that the central freight association lines might find it more desirable to undertake at once the tariff readjustment asserted by them to be necessary. Save as above indicated, the proposed increases were denied and the tariffs carrying them were ordered canceled.

"The facts disclosed and occurrences originating subsequent to May 29, 1914, as presented at the further hearing may be summarized under three heads—first, completed returns for the fiscal year ended June 30, 1914, and returns for succeeding months; second, the war in Europe; and third, results of the original order.

When these cases were originally submitted, as also when the original report was prepared, the revenue and expenditure account for June, 1914, and the property investment account for that fiscal year, were not available, the war was unforeseen, and the results of our order were, of course, yet to come. Collectively they present a new situation. The carriers offered further evidence of their financial condition during the fiscal year ended June 30, 1914, including returns for that year completed by addition of the revenue and expenditure account for June and the capital investment account for the year. They also introduced revenue and expenditure accounts for July and August of the current fiscal year. Reports to the Commission for Sept., 1914, have since made possible a similar statistical statement for that month also. These figures serve to emphasize our previous finding of the need of carriers in official classification territory, taken as a whole, for increased net revenue.

"For the fiscal year just ended the net operating revenues as shown by the carriers are lower than was estimated or anticipated when the original report was issued. Not since 1908 have the net operating revenues of the carriers been so low as in the fiscal year ended June last. In 1908, moreover, the property investment account of the carriers was \$1,309,000,000 less than in this last fiscal year. The surplus for 1908, after deducting \$102,000,00 paid in dividends, was

\$47,000,000, whereas for the last fiscal year the dividends paid, amounting to \$118,000,000, drew on the accrued surplus to the extent of \$8,200,000. Of this amount the New England roads contributed over \$4,000,000. It is not to be inferred from these figures that the total surplus in 1913-14 decreased by \$8,200,000. From reports made by the carriers to this Commission the appropriated surplus for class I roads, eastern district, was \$343,508,201 on June 30, 1914. This was an increase over appropriated surplus existing on June 30, 1913, of \$19,378,945. During the same year there was, however, a shrinkage in the excess of credit over debit balances to profit and loss of \$53,957,233, indicating for the last fiscal year a shrinkage in total surplus of \$34,578,288.

"From whatever comparative standpoint viewed, the net operating revenues of the last fiscal year must be regarded as unduly low. Operating costs and operating revenues fail to show the tendency to such concomitant variation as should prevail in the transportation industry. While the gross revenue in that year declined only about 3.4%, the net revenue shrank approximately 17.7% as against the previous fiscal year. The indication is that some important items of cost have become relatively inelastic, and that a fall in gross revenue leaves an increasingly narrow margin of net revenue. The situation is different when an attempt is made to estimate the decline in the rate of return. The property investment accounts as now standing on the books of the carriers cannot be accepted as accurately representing the fair value of their property devoted to serving the public.

"Objection was raised to the increasing amounts charged in recent years to additions and betterments, particularly because the carriers in presenting a financial review of their operations for a series of years failed to indicate separately the relative effect upon their accounts of outlay for additions and betterments as compared with allowance for depreciation, it being contended that this caused an unwarranted diminution in the resulting net income from operation. The fact nevertheless remains that if the increase in depreciation and betterment accounts in the last fiscal year over the average of similar allowances for the five year period were added to their net operating income for the last fiscal year the results of operation would still fall below a fair return upon the amounts carried upon roadway. We cannot view with favor while there has been recently an enlarged expenditure for maintenance of equipment. It is clear that it has not been sufficient to restrict to proper limits the number of cars and locomotives needing repairs. The carriers in the past have not known how large an expenditure to figure upon for the maintenance of the newer type of steel freight cars, and appear now to have discovered that such expenditure must be greater than was anticipated. The like may be said as to the recent enlargement of expenditure upon roadway. We can not view with favor any attempt to obtain an increase in net revenue through unduly restricted expenditures upon maintenance. To whatever extent recent increased provision for depreciation or expenditure for maintenance may militate against a fair comparison of supposedly comparable statistical items for various years, we cannot say on this record that such charges as at present returned by the carriers are excessive, viewed either from the standpoint of power accounting or of safety of operation. The testimony shows that while some maintenance is being deferred, other maintenance deferred during the last fiscal year is now being made, and that the expenditure therefor during July



and August measured up to the level of recent years. The testimony also shows that transportation expense is being reduced through the laying off of employes and cancellation of train service.

"It was urged on behalf of the carriers and the investment bankers who appeared at the hearing that the war in Europe has created a condition which renders the diminution of the carriers' net income a menace to the prosperity of the country; that the war has placed an added strain upon the credit of carriers; that rates of interest will rise; that a large volume of railroad securities is held abroad; that the denial of the increase in freight rates would, in view of the diminished net income, be followed by a dumping of foreign securities upon the American markets; that our markets would not be able to absorb these securities—at least, without great fall in price; that disaster would result not only to our railways, but to insurance, banking and industrial concerns; and that for these and other reasons, extending far beyond the direct needs of the carriers themselves, we should now allow the proposed increase in rates. With some of these considerations we have, as a commission, nothing to do. Our powers and functions are those, and only those, conferred by Congress. As was said in *Advances in Rates*, Western Case, 20 I.C.C. 307, at page 317: 'We must not regard too seriously, however, the effort of railway counsel to establish this Commission in loco parentis towards the railways. We must be conscious in our consideration of these rate questions of their effect upon the policy of the railways and, ultimately upon the welfare of the state. This country cannot afford to have poor railways, insufficiently equipped, unsubstantially built, carelessly operated. We need the best of service. Our railway management should be the most progressive. It should have wide latitude for experiment. It should have such encouragement as would attract the imagination of both the engineer and the investor. Nevertheless, it is likewise to be remembered that the Government has not undertaken to become the directing mind in railway management. We are not the managers of the railways. And no matter what the revenue they may receive there can be no control placed by us upon its expenditure, no improvements directed, no economies enforced.'

"The conflict in Europe will doubtless create an unusual demand upon the world's loan fund of free capital, and may be expected to check the flow of foreign investment funds to American railways. It appears that our railways represent the bulk of European investment in this country. The rate of interest—the hire of capital—has risen during the last decade, and may rise still further. It is computed that in 1915, 1916, and 1917 the carriers in official classification territory must arrange for the payment or refunding of securities aggregating over \$500,000,000. True, the representations of the carriers in the 1910 cases, that without the increases then sought their credit must totally vanish, proved strangely at variance with their subsequent experience in the borrowing of many hundreds of millions. But we do not doubt that the financial problems of the carriers have been made much more acute by reason of the war, and if we are to set rates that will afford reasonable remuneration to these carriers, we must give consideration to the increased hire of capital as well as to other increased costs. The suggestions, made in our original report, of methods whereby to increase net revenue were not susceptible of being put into immediate operation or calculated to produce immediate financial results. This was recognized in our original

report. The period which has since elapsed has, of course, been entirely too short for either purpose. Some testimony was offered at the further hearing bearing on what had been done or undertaken in line with these suggestions, and estimates were made by the traffic officials of several carriers as to the annual yield to be expected. These estimates were not based on any accounting computation and can afford little guide as to what the results will prove to be.

"While we differ as to the relative importance to be attached to the various considerations presented, we agree in the conclusion that, by virtue of the conditions obtaining at present, it is necessary that the carriers' revenues be supplemented by increases throughout official classification territory. Whatever the consequences of the war may prove to be, we must recognize the fact that it exists, the fact that it is a calamity without precedent, and the fact that by it the commerce of the world has been disarranged and thrown into confusion. The means of transportation are fundamental and indispensable agencies in our industrial life and for the common weal should be kept abreast of public requirements. The original report, besides approving a rate increase in central freight association territory, suggested 10 sources of additional revenue for all carriers throughout official classification territory; the present report, recognizing the existence of the relief granted to the central freight association lines by permitting the carriers to file tariffs providing, with certain exceptions specified herein, for horizontal rate increases in official classification territory. It is expected that the constructive work suggested in the original report for the purpose of conserving and augmenting the net revenues of the carriers generally will be carried forward without interruption. Carriers will be required to keep an account of the additions to their revenues from increases in rates subsequent to July 29, 1914, and from new charges, and to report separately thereon to the Commission at the end of 12 and 24 months, respectively. For various reasons we shall expect from the proposed increase the following rates:

"1. Rail-lake-and-rail, lake-and-rail, and rail-and-lake rates. It is shown on the record that since the rail carriers acquired ownership and control of the lake lines successive increases have been made in the rates via lake tending to lessen the differences between them and the all-rail rates.

"2. Rates on bituminous coal and coke. Not long since these rates were investigated and maximum rates were prescribed by the Commission. The key rates upon bituminous coal—the rate from the Pittsburgh district to Youngstown, and the rate on lake cargo coal to Ashtabula—have been fixed in the light of the various factors which enter into the transportation of such coal. The prevailing rates are remunerative, and the financial condition of the principal bituminous coal—the rate from the Pittsburgh district of many of the other carriers in official classification territory. Twice in the not distant past the rates on bituminous coal have been increased 5c. a ton, and would seem now to be as high as may fairly be allowed. It must be remembered also that the carriers are not seeking general increases in rates on anthracite coal, and both kinds of coal are used in competitive markets. As to coke, the rates controlling the greater volume of traffic now moving in official classification territory have recently been set by the Commission upon a basis which was specifically designed to guard against shrinking the carrier's revenue therefrom, and which really resulted in substantial additions to their earnings on that traffic.

"3. Rates on anthracite coal and iron ore,

largely because they are before us for review in other proceedings.

"4. Rates held by unexpired orders of the Commission.

"In our original report we declined, for reasons there stated, to allow increased rates in central freight association territory on cement, starch, brick, tile, clay, and plaster. On further consideration, in the light of the existing situation, these rates may be increased throughout official classification territory under the limitations herein set forth.

Joint rates between official classification territory on the one hand, and southeastern territory, the southwest and points on or east of the Missouri River on the other, may be increased not to exceed 5% of the division of the rate accruing to the carriers in official classification territory. If these increases involve a change in the relationship under the long-and-short-haul rule between intermediate points and more distant points outside of official classification territory relief from the fourth section of the act must first be secured on regular application.

"Interstate rates to and from New England from and to points in trunk line or central freight association territory, where necessary to preserve established relationships between points or ports in New England and points or ports in trunk line territory, may be increased not to exceed 5%.

"Subject to the maintenance of the established Atlantic port differentials, rates to and from New York may be increased not to exceed 5%, and rates to and from Portland, Boston, Philadelphia, and Baltimore may be increased to the extent necessary to maintain said differentials.

"Except as otherwise above specified rates in official classification territory may be increased by not more than 5%; but rates increased since July 29, 1914, may not now be again increased so as to exceed those then in effect by an aggregate of more than 5% of the intraterritorial rate, or of the portion or division of the intraterritorial rate accruing to the road or roads in official classification territory, as the case may be.

"If fractions in excess of one-half a mill are rounded upward, fractions less than one-half a mill are to be discarded.

"In some instances, and in part because of the pendency of this proceeding, we have recently suspended proposed increased rates in this territory. Carriers may, if they so elect, now cancel such tariffs so suspended and file in lieu thereof tariffs which conform to the limitations above specified. If that is done such suspensions will be vacated.

"To the extent above indicated we now modify our previous findings, and carriers affected may file, effective or not less than 10 days notice, such tariffs as do not offend against the restrictions above stated.

Chairman Harlan and Commissioner Clements gave dissenting judgments.

**Railway Lands Patented.**—Letters patent were issued during October, in respect of railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:—

	Acres.
Calgary and Edmonton Ry.	2,724.97
Canadian Northern Ry.	24,816.67
Canadian Pacific Ry.	18.58
Qu'Appelle, Lake, Lake and Saskatchewan Rd. and Steamboat Co.	2,245.10
Total	30,803.32

**When hardening springs in oil,** the oil should be watched, and a little fresh oil added every day or so. When the whole mass has become pretty well burned, it should be thrown out, the tank cleaned and filled with fresh oil, as worn out oil loses its power, and will not harden plate steel as it should be hardened.



## Traffic Orders by the Board of Railway Commissioners.

The dates given for orders are those on which the hearings took place, and not those on which the orders were issued:—

### Interswitching at Listowel.

22819. Nov. 4. Re application of Town of Listowel, for an order directing the G. T. R. and the C. P. R. to establish interswitching facilities between their lines at Listowel. It is ordered that a transfer track for the interchange of traffic between the G. T. R. and the C. P. R. at Listowel, be constructed near Reserve St.; the work to be done by the C. P. R.; a plan showing the proposed transfer track to be filed by the C. P. R. for the approval of an engineer of the Board; and such track to be constructed and completed within one month after the erection of Libby, McNeill & Libby Co.'s factory. That the Town of Listowel pay one third of the cost of installing the interchange track, the remainder to be divided equally between the two railway companies; and that when the interchange is established, the Board's general interswitching order apply to all movements to or from the industrial tracks of the two railway companies.

### Classification of Prepared Roofing.

22880. Nov. 16, re application of Standard Paint Co. of Canada, Ltd., for a reduced rating on prepared roofing in the Canadian Freight Classification. It is ordered that the application be dismissed.

### Express Rates on Fish from Vancouver.

22893. Nov. 17.—The complaint of W. J. Guest Fish Co., Ltd., of Winnipeg, in regard to express rate charged on fresh fish, in carload lots, from Vancouver to Winnipeg. Upon hearing the matter at Winnipeg, May 28, 1914, in the presence of a representative of the complainant company, no one appearing for the Dominion Express Co., and upon reading the arguments of the parties thereafter filed, it is ordered that the complaint be dismissed.

### Supplement 4 to Canadian Freight Classification 16.

22895. Nov. 25, re application of Canadian Freight Association, behalf of railway companies subject to the Board's jurisdiction, under sec. 321 of the Railway Act, for an order approving the proposed Supplement 4 to Canadian Freight Classification 16, containing certain increased, reduced, and additional ratings. Notice of the proposed increased ratings having been given in The Canada Gazette, and the Board having invited consideration thereof by the Canadian Manufacturers' Association, the Montreal Chamber of Commerce, the Ontario Wholesale Grocers' Guild, and the Boards of Trade of Halifax, St. John, Quebec, Montreal, Ottawa, Toronto, Hamilton, Brantford, London, Winnipeg, Brandon, Regina, Saskatoon, Calgary, Edmonton, Vancouver, and Victoria; It is ordered that the said supplement as amended and revised and resubmitted for approval by the Canadian Freight Association, be approved, to become effective not later than January 2, 1915.

### Interswitching at Coldwater.

22915. Nov. 25, Re application of Village of Coldwater, Ont., for an order directing the G.T.R. and the C.P.R. to provide interswitching facilities there it is ordered that 30 days from date the C.P.R. construct a transfer track between its railway and the G.T.R. at Coldwater, so as to provide for the reasonable receiving, forwarding, delivering, and interswitching of traffic between their respective railways; the C.P.R. to file, within 15 days from date, plans showing the proposed interchange tracks, for the

approval of an engineer of the Board; the C.P.R. to keep an accurate and detailed account of the expense of putting in the tracks. That the Applicant supply a bond, to cover one-half of the cost of the work of constructing the interchange tracks; such sum, or so much thereof as the Board may later, and after investigation, deem proper, to be paid over on and according to the Board's direction; and for the determination of such sum to be so paid over, the applicant, and the C.P.R. and G.T.R., shall keep an account of the cars received and shipped over the transfer track during 12 months following its completion.

### Kettle Valley Railway Tariff.

22921. Nov. 26.—Re application of the Kettle Valley Ry., under sec. 327 of the Railway Act, for approval of its Standard Freight Mileage Tariff of Maximum Tolls, C.R.C. 27, applying between stations in British Columbia, whereas, in accordance with the judgment of the Board in the Western Rates Case, the lawful effective date of the said tariff should have been Sept. 1, 1914; and upon the company undertaking to refund all freight charges exceeding the said Standard Tariff, C.R.C. 27, collected upon shipments made since and including Sept. 1, it is ordered that the tariff C.R.C. 27.

### Halifax & South Western Ry. Freight Tariff.

22955. Dec. 4.—Granting application of the Halifax & South Western Ry. for approval of its Standard Mileage Freight Traffic, C. R. C. no. F-1, applying on general merchandise in the absence of special or other tariffs giving lower rates.

### Freight Rates on Brick, Etc.

22963. Re complaints of Milton Pressed Brick Co. and Hagersville Contracting Co. against certain minimum carload tariffs of the railway companies, applicable to the carriage of brick, crushed stone, and other construction materials. It is ordered, with respect to the tariffs of railway companies operating in Eastern Canada, as follows, namely: That wherever it occurs, the provision of a minimum weight of 50,000 lbs. a carload of building brick, other than enamelled or glazed brick, be supplemented to provide that should a car of the loading capacity of 40,000 lbs. be ordered which the carrier is unable to furnish within a reasonable time, a car of greater capacity shall be furnished and charged for on the basis of the actual weight of the brick loaded therein, subject to a minimum of 40,000 lbs.; but that should such car so furnished be loaded in excess of 45,000 lbs. the minimum weight assessable for freight charges shall be 50,000 lbs. That wherever it occurs in the special tariffs applicable to brick, stone, and other commodities commonly described in the tariffs as "building material," the provision for an increase of 5% per foot to the tariff minimum weight, in the case of cars longer than those covered thereby, be withdrawn and cancelled. That effect be given to this order not later than Dec. 21, 1914.

### C. P. R. Embargo at Mile End, Que.

22974. Dec. 7.—Re embargo placed by C. P. R. upon all traffic originating on the Canadian Northern, Grand Trunk, and Intercolonial Railways, consigned for delivery on its team tracks at Mile End, Montreal, it is ordered that the C. P. R. be required forthwith to cancel the said embargo.

### Holding Cars for Consignees' Orders.

22975. Dec. 10.—The application of American Coal and Coke Co., of Detroit, Mich., for an order disallowing note 3 to rule 1, pg. 7, of Michigan Central Rd., C.R.C. 2171, which reserves the right to the com-

pany to hold cars for consignees located within the Detroit switching limits at Windsor, Ont., awaiting final delivery orders, or when delivery cannot be effected due to inability of consignee to receive the same; also for an order requiring the company to refund, with interest, sums paid under protest by the applicant under the said tariff rule. It is ordered that the applications be refused.

### Mixed Carload Rates on Groceries, Etc.

General Order 133. Dec. 19.—Re proposed cancellation on Jan. 1, 1915, of arrangements whereby mixed carloads of foreign and native liquors, and mixed carloads of groceries, classified 5th class in straight carloads, and dried fruits, classified 4th class in straight carloads, are carried at their respective carload rates between points west of and including Port Arthur, and thereto from eastern shipping points. Upon hearing the matter at Toronto, Dec. 12, 1914, the Toronto, Montreal and Hamilton Boards of Trade, and other parties interested being represented, it is ordered that the proposed cancellation of the said arrangements be, and it is hereby suspended until further order of the board.

### Grand Trunk Railway Betterments, Construction, Etc.

London, Ont.—The city freight sheds, York St., London, Ont., were destroyed by fire, Dec. 6, the offices and the bonded warehouse alone escaping. The shed was about 200 ft. long.

Port Huron Shops.—The residents of Port Huron, Mich., have voluntarily raised \$100,000 for the purpose of buying the Huron Thresher Co.'s plant, in order that the site may be utilized for the new G.T.R. shops. Nothing has yet been announced as to when construction will be started.

### Great Northern Railway Lines in Canada.

Vancouver Terminals.—The Board of Railway Commissioners has made a new order respecting the three viaducts which were planned to span the G.N.R. tracks in the east end of Vancouver, connecting the False Creek terminal grounds with the inlet. Under the original order a viaduct has been erected at Hastings St. at a cost of \$100,000. The new order cancels for the present the necessity of building the viaducts at Pender, Keefer and Harris Streets. This is the outcome of the recent decision of the Imperial Privy Council relieving the British Columbia Electric Ry. of the payment of 20% of the cost of these viaducts. (Dec., 1914, pg. 545.)

Canadian Society of Civil Engineers in B.C.—The officers of the Victoria, B.C., branch were elected at the annual meeting Dec. 9, as follows:—Chairman, D. O. Lewis. Canadian Northern Pacific Ry.; Vice Chairman, H. W. E. Cavanau; Secretary, E. W. McIntyre; Executive Committee, A. W. Wilby, A. E. Foreman; Auditors, E. H. Harrison, H. A. Icke. The retiring chairman was F. C. Gamble, Chief Engineer of the B. C. Department of Railways. On Dec. 10 and 11, the members of the Vancouver branch met with the Victoria branch. A paper on harbors was read by J. S. McLaughlin, engineer in charge of harbor works in Vancouver, and G. R. G. Conway, Chief Engineer, British Columbia Electric Ry., and chairman of the Vancouver branch, read a paper on legislation and the engineering profession. On the afternoon of the 11th the party made a trip to Albert Head, and in the evening attended the annual dinner.



## Canadian Pacific Railway Construction, Betterments, Etc.

**Eastern Division.**—Construction was reported to have been started on the new double track bridge over the Lachine Canal at Montreal, Dec. 9. This is the last piece of work necessary to complete the building of the second track between Montreal and eastward. The cost of widening the approaches and erecting the bridge is estimated at \$1,000,000.

**Ontario Division.**—The Campbellford, Lake Ontario, and Western Ry. has a joint terminal with the Canadian Northern Ontario Ry. at Belleville, Ont., and a section of joint track and terminals with the Georgian Bay & Seaboard Ry. at Orillia, Ont. The Dominion Parliament is being asked to confirm the agreements between the two companies with respect to the same.

The C.P.R. is applying to the Dominion Parliament for the confirmation of an agreement with the Canadian Northern Ontario Ry. respecting the use of terminals at North Toronto, Ont.

The new double track bridge over the Humber River, near Toronto, on the Toronto-Windsor line is completed. Trains commenced to run over the southerly, as well as the northerly, track Dec. 1.

The C.P.R. is applying to the Dominion Parliament for an extension of time for the construction of its projected line from between Bolton Jct. and Palgrave, on the Toronto-Sudbury line, and Campbellville, Ont., on the Toronto-Windsor line.

The South Ontario Pacific Ry. is applying to the Dominion Parliament for an extension of time for the building of its projected railway from Hamilton to the Niagara River at Niagara Falls, Ont.

**Manitoba Division.**—An agreement has been reached between the Winnipeg City Council and the company providing for the settlement of various matters which were the subject of difference between the two corporations. There were 31 matters on which the city is asked for a settlement with the company, and 12 of which the company asked for a settlement with the city.

As a result of a deputation which waited on the company's officials at Winnipeg, Dec. 5, the Mayor of Souris announced on his return that the direction for the transfer of the present divisional point at Souris to Brandon was withdrawn.

**Saskatchewan Division.**—The Manitoba and Northwestern Ry. is asking the Dominion Parliament for an extension of time for the building of the projected line from Theodore to some undecided point on the line running from Govan to Lanigan, Sask.

The Expanse subdivision has been extended to Vantage, Sask., by the opening for traffic of the line from Rycroft, mile 41.2, to Vantage, mile 49.6 from Moose Jaw. The line is being extended to Vanguard, which was expected to be reached by the tracklaying gang by Dec. 31.

**Alberta Division.**—The Alberta Central Ry. is applying to the Dominion Parliament for an extension of time for the building of the following lines:—From Rocky Mountain House to the G.T. Pacific Ry., near Yellowhead Pass; three branch lines of 30 miles each, and two of 35 each into the Big Horse Range and along the Brazeau River.

**Kootenay Central Ry.**—The line which connects the Crownsnest Pass line at Coal-mountain with the main transcontinental line at Golden, B.C., 160 miles, is reported to have been opened for traffic, Dec. 8. It has been under construction for several years, and has been in operation for some

time between Golden and Spillimacheen, 40 miles. Although about 40 miles of track had been laid at the southern end of the line for some time, no regular train service had been operated over it.

**British Columbia Division.**—The British Columbia Southern Ry. is applying to the Dominion Parliament for an extension of time within which it may build the projected line from Michel to Kananaskis, B.C.

The new double track bridge over the Pitt River at Coquitlam, B.C., has been completed and opened for traffic.

The viaduct at Granville St., Vancouver, which is part of the new terminal works, was finally completed and opened for general traffic, Nov. 30. It had been opened for pedestrian traffic nearly two weeks previously. (Dec., 1914, pg. 543.)

## Railway Finance, Meetings, Etc.

**Algoma Central and Hudson Bay Ry.**—It was announced in Toronto, Dec. 1, that on account of depressed traffic conditions, the railway was unable to meet the half yearly bond interest coupons due that day. The board proposes to place before the bondholders at an early date a plan to redeem the indebtedness. This railway, together with the Algoma Eastern Ry., is controlled by the Lake Superior Corporation.

**Canadian Pacific Ry.**—The Guaranty Trust Co. of New York, in association with a number of other New York financiers, has purchased an issue of \$12,690,000 of 4½% equipment trust certificates, maturing in semi annual instalments of \$470,000 each from July 1, 1915. These are the balance of the Victoria Rolling Stock and Realty Co.'s securities, the amount of which was shown in the annual report as \$13,630,000, of which \$940,000 has since been paid. They are called C.P.R. 4½% equipment trust certificates to designate them on what is called the Philadelphia plan.

**Grand Trunk Ry.**—A London, Eng., press cablegram, Dec. 17, says:—"The G.T.R.'s new issue of 5½% three year notes is put forward under burdensome conditions, the company offering 1% commission to the underwriters, and apart from general expenses the issue will cost it 7%. The company during the summer sold £2,000,000 one year bills on a 4% basis, which, like the latest offer, were secured on debenture stock."

**Great Northern Ry. (Canada).**—The construction of this railway, which now forms a section of the Canadian Northern Quebec Ry., was undertaken by the Great Northern Construction Co., payment being made partly in bonds, partly in stock and partly in cash. Portions of the work were sublet to Ross, Barry and McCrae, who were to be similarly paid, the contract being entered into in 1899. After the contracts were completed the subcontractors and the general contractors failed to agree as to the price for certain portions of the work, and suit was entered, the Bank of Ottawa taking up the subcontractors' interests. The action has dragged on for over 10 years, judgment being given, Nov. 25, by Justice Guerin for \$426,886, of which \$63,000 is to be paid in cash, and the remainder in stock and bonds.

**Temiscouata Ry.**—Net earnings for September, 1914, \$4,755, against \$2,500 for October, 1913.

**Toronto, Hamilton and Buffalo Ry.**—The Dominion Parliament is being asked to confirm the agreement amalgamating the Erie and Ontario Ry. with the T.H. and B. Ry.;

to authorize the amalgamated company to issue bonds to the same extent as the E. and O. Ry. is authorized, and to secure the same by a mortgage of that railway and by a third mortgage of the T.H. and B. Ry.; to authorize the amalgamated company to issue bonds or other securities to the amount of \$15,000,000 to provide for the retirement of all existing bonds and securities of the amalgamated company, and to secure the same by a mortgage upon the entire undertaking of the amalgamated company.

## Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those for 1913-14, from July 1, 1914:

	Gross Earnings	Expenses	Net Earnings	Increase or Decrease
July	\$1,394,300	\$1,163,800	\$230,500	x \$85,800
Aug.	1,367,700	1,123,000	244,700	x 163,900
Sept.	2,109,400	1,519,000	590,700	65,800
Oct.	1,895,300	1,332,100	563,200	x440,900
Nov.	1,670,200	1,123,100	547,100	x417,700
	\$8,647,400	\$6,261,200	\$2,386,200	x\$1,040,500
Dec.	\$2,471,500	\$1,431,000	\$1,040,500	.....

x Decrease.  
Approximate earnings for three weeks ended Dec. 21, \$1,019,700, against \$1,602,100 for same period 1913.

## Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1913-14, from July 1, 1914:

	Gross Earnings	Expenses	Net Earnings	Increase or Decrease
July	\$10,481,971.72	\$6,713,525.89	\$3,778,445.83	x\$398,347.35
Aug.	8,917,764.33	6,554,666.68	3,373,157.70	x 597,981.54
Sept.	10,754,139.67	6,387,091.28	4,367,048.39	x 48,530.30
Oct.	9,282,928.49	5,361,600.13	3,921,328.36	x2,281,529.48
	\$40,436,804.26	\$25,606,823.98	\$14,829,980.28	x\$3,266,388.62
Dec.	\$9,628,016.79	\$6,361,628.17	\$3,266,388.62	.....

x Decrease.  
Approximate earnings for Nov., \$7,823,000, against \$13,270,000 for Nov., 1913; and for three weeks ended Dec. 21, \$5,077,000 against \$8,382,000 for same period 1913.

## Grand Trunk Railway Earnings, Etc.

The following figures show the earnings of the G.T.R., G.T.W.R., and D.G.H. & M.R. for Sept. and Oct.:

Grand Trunk Railway (Including Canada Atlantic Ry.)			
	September.	October.	
Earnings .....	\$3,838,250	\$3,609,350	
Expenses .....	2,858,900	2,533,100	
Net earnings .....	\$979,350	\$976,250	
Grand Trunk Western Railway.			
Earnings .....	\$611,450	\$639,900	
Expenses .....	553,450	602,000	
Net earnings .....	\$58,000	\$37,900	
Detroit, Grand Haven & Milwaukee Ry.			
Earnings .....	\$221,800	\$255,100	
Expenses .....	233,750	224,800	
Net earnings .....	\$11,850	\$30,300	

## TRAFFIC RECEIPTS OF THE SYSTEM.

Aggregate traffic receipts from July 1 to Nov. 30, 1914:				
	1914	1913	Inc.	Dec.
G.T.R. ....	\$18,147,042	\$20,434,612	.....	\$2,287,570
G.T.W.R. ....	3,122,020	3,106,466	\$15,554	.....
D.G.H. & M.R. ..	1,170,392	1,134,443	36,349	.....

Approximate earnings for three weeks ended Dec. 21, \$2,576,361, against \$3,039,297 for same period 1913.

## Grand Trunk Pacific Railway Earnings.

The approximate earnings of the Prairie Section and Lake Superior Branch, 1,104 miles, for November were \$1,000,000, against \$1,000,000 for Nov., 1913. Approximate earnings for the same period Nov. 30, \$1,000,000, against \$1,000,000 for the same period 1913.



## Mainly About Railway People.

SIR WM VAN HORNE returned from Cuba to Montreal, just before Christmas.

SIR THOMAS, Lady, and Miss TAIT, will spend part of the Winter in Florida.

JOHN WATSON, who died at Battle Creek, Mich., recently, aged 79, was at one time Superintendent of Dining Cars, G.T.R.

C. G. HIRT, Eastbound Agent, C.P.R., St. Louis, Mo., was married on December 2, to Miss F. M. Pendergast.

SIR THOMAS SKINNER, director, C.P.R., London, Eng., has been elected a director of Laurentide, Ltd., Montreal.

A. W. WHEATLEY, Vice President and General Manager, Canadian Locomotive Co., Kingston, Ont., has been in Europe for a short trip.

R. SMITH, a dispatcher on the Temiskaming and Northern Ontario Ry. at North Bay, Ont., was drowned there while skating, Dec. 6.

T. RODGERS, Travelling Car Inspector, G.T.R., London, Ont., has, after 48 years of continuous service with the company, retired under the pension fund.

E. S. HART, Chairman of the Board of Directors of the Rodger Ballast Car Co., Chicago, Ill., died Nov. 23. He was one of the founders of the Rodger Ballast Car Co.

C. T. SELWAY, heretofore Assistant Superintendent Great Northern Ry., England, has been appointed Superintendent of the Line, succeeding the late W. H. Hills.

M. J. BUTLER, C.M.G., M.Can.Soc.C.E., of Montreal, has been appointed a valuation expert to examine into the physical aspects of the Montreal Water & Power Co., to succeed E. Belanger, M.Can.Soc.C.E.

Hon. N. Curry, President, Canadian Car & Foundry Co., Montreal, sailed from Halifax, N.S., Nov. 29, on the s.s. Franconia for England and is expected to return early in January.

JOHN NUGENT, who died at Moncton, N.B., Nov. 29, aged 69, was, until his retirement on the pension fund about three years ago, Foreman of the Erecting Shop, Intercolonial Ry.

F. C. ELLIOTT, who has been elected President, White Pass & Yukon Route, is a lawyer, with office at Chicago, and has been counsel for and identified with the W. P. & Y. R. since its inception.

E. F. L. STURDEE, Assistant District Passenger Agent, C.P.R., Toronto, is a second cousin of Admiral Sir F. C. D. Sturdee, who destroyed the German Pacific squadron off the Falkland Islands, Dec. 9.

R. O. SWEEZEY, B.Sc., A.M. Can. Soc. C. E. formerly General Manager, Montreal Engineering Co. Ltd., has been appointed Professor of Civil Surveying and Astronomy, Royal Military College of Canada, Kingston, Ont.

F. H. PHIPPEN, K.C., General Counsel Canadian Northern Ry., who was operated on in New York, Nov. 25, and subsequently spent a short time at Atlantic City returned to Toronto for Christmas, thoroughly convalescent.

F. C. SALTER, European Traffic Manager, G.T.R., returned to London, Eng., Dec. 10, after a business trip to Holland. He stated that further help was urgently required to enable the Belgian refugee problem to be adequately dealt with.

C. L. HERVEY, M.Can.Soc.C.E., Chief Engineer of the Glengarry and Stormont Ry., which has been leased to the C.P.R., was entertained to a luncheon early in December, to celebrate the completion of the laying of steel on the line.

CAPT. T. C. IRVING, JR., Vice President of Robert W. Hunt & Co., Ltd., Bureau of Inspection, Tests, and Consultation, who is in England with the Canadian Engineers, sent a cablegram of Christmas greeting to the Mayor of Toronto, on behalf of his men.

JAMES MANSON, Assistant to the Vice President, C.P.R., Winnipeg, spent a part of December in California, on a vacation, prior to removing to Montreal, where he accompanies George Bury, who has been appointed Vice President there.

H. WHEELER, who has been appointed General Manager, White Pass & Yukon Route, at White Horse, Yukon, has been in the company's service for 14 years, his last position having been Superintendent of the Mail Service Department and River Division.

S. B. CARTER, heretofore District Superintendent, London and North Western Ry., (England) at Manchester, has been appointed District Superintendent at Liverpool, vice, W. M. Turnbull appointed Assistant Superintendent of the Line.

LT. COL. E. WALTER RATHBUN, President, Bay of Quinte Ry., Thousand Islands



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E. W. Beatty,  
Vice President and General Counsel, Canadian Pacific Railway.

Ry. and Oshawa Ry., Deseronto, Ont., has been appointed to command the 6th brigade of field artillery, which is to be sent as part of the Canadian overseas force.

F. J. HOLMAN, who retired recently from the position of Bridge and Building Foreman, G.T.R., Stratford, Ont., was entertained by the employees of the department there, Nov. 28, and presented with a pair of rocking chairs.

N. P. TRACY, Division Storekeeper, Quebec Grand Division, Canadian Northern Ry., Limoilu Jct., was presented with a silver fitted club bag, and a toilet set for Mrs. Tracy, Dec. 8, on their leaving for a holiday in England. They sailed from St. John, N.B., Dec. 12, on the s.s. Hesperian.

JOHN GALBRAITH, Dean of the Faculty of Applied Science, Toronto University, who died July 22, left an estate of \$33,404, in

which his wife has a life interest. At her death it is to be divided equally among the daughter and two sons. He also left \$6,262 life insurance in favor of his wife.

H. C. OVIATT, recently Superintendent of the old Colony division of the New York, New Haven, and Hartford Rd., has been appointed Assistant Mechanical Superintendent in charge of a new bureau, known as the Bureau of Fuel Economy, with office at New Haven, Conn.

Major A. H. TYLER, R.E. who was killed in action in France in November, was a son of the late SIR HENRY TYLER, a former President of the Grand Trunk Ry., and Lieut. A. Tyler, R.E., who was also killed in action at the same place a day later, was a nephew of Major Tyler.

ANGUS GORDON, who has been appointed Manager, Chatau Laurier, G.T.R., Ottawa, Ont., was born in Scotland, and was for several years, from the opening, Assistant Manager, King Edward Hotel, Toronto, and afterwards Manager of the Victoria Hotel, New York.

E. ROBB, who has been appointed Traveling Freight Agent, Intercolonial Ry., Montreal, was presented with a pipe, pouch and umbrella, by his associates in the General Freight Agent's office, and some other friends in Moncton, N.B., on his leaving there recently, to enter on his new duties.

A. F. ZIPF, who has been appointed Traffic Manager, White Pass & Yukon Route, at Seattle, Wash., was formerly in the Alaska Commercial Co. and the Northern Navigation Co.'s service, and while the latter company operated its steamboat on the Yukon River he was its Traffic Manager.

Lieut. A. Lacey Johnson, of the Montreal Heavy Brigade, who has been appointed Lieutenant, No. 4 Section, Divisional Ammunition Column, 6th Field Artillery Brigade, Canadian Expeditionary Force, is a son of Lieut.-Col. LACEY R. JOHNSON, of the Montreal Heavy Brigade, and General Superintendent, Angus Ships District, C.P.R.

J. M. RAPELJE, who was appointed General Manager, Lines East of Paradise, Mont., Northern Pacific Ry., recently, was born at Chippewa, Ont., Jan. 22, 1857, and entered railway service in 1879, as brakeman, G.T.R., and was later a conductor on the C.P.R. All his railway service since 1888 has been in the United States.

A. E. WILKINSON, Division Freight Agent, Intercolonial Ry., Halifax, N.S., who died there Nov. 26, aged 45, was born at Hawkesbury, Ont., June 3, 1870. He entered I.R.C. service, June 1, 1890, as a clerk at Moncton, N.B. In Dec. 1909 he was appointed chief clerk, General Freight Agent's Office, Moncton, N.B., and on May 1, 1912, Division Freight Agent, Halifax.

JOHN WILLIAM PUGSLEY, who has been appointed Secretary, Railways and Canals Department, Ottawa, was born at Amherst, N.S., Mar. 12, 1861, and first entered the civil service Feb. 14, 1880. From 1889 to 1896 he was Assistant Accountant, from 1896 to 1903 Clerk of the Railway Committee of the Privy Council and from 1903 to Dec., 1914, Assistant Secretary, Railways and Canals Department.

M. FRANK TOMPKINS, who has been appointed Division Freight Agent, Intercolonial Ry., Halifax, N.S., was born at Margaree, N.S., Dec. 6, 1878, and entered I.R.C. service Nov. 23, 1896, since when he has been, to Mar. 31, 1900, telegraph operator at various points; Apr. 1 to May 1, 1900, freight clerk, Truro, N.S.; May 1, 1900, to Sept. 2, 1902, freight clerk, Sydney, N.S.; Sept. 1, 1902, to July 1, 1903, division time keeper, New Glasgow, N.S.; July 1, 1903, to July 1, 1904, telegraph operator, New Glasgow, N.S.; July 1, 1904, to Jan. 1, 1911, relieving agent;



Jan. 1, 1911, to Nov. 30, 1914, chief clerk, Division Freight Agent's office, Halifax, N.S.

GEORGE BURY, who took over the position of Vice President, C.P.R., at Montreal, Jan. 1, was described recently in an Ottawa paper as "Mr. David Bury, New Zealand Manager of the Canadian Pacific Railway."

JOSEPH S. CARTER, who was appointed District Passenger Agent, C.P.R., Nelson, recently, was born at Aurora, Ill., Aug. 14, 1864, and entered C.P.R. service, Aug. 1, 1883, since when he has been, to Oct. 1889, in Passenger Department, Toronto; Oct. 1889 to Jan. 1901, ticket agent, Winnipeg; Jan. 1901 to May 1907, District Passenger Agent, Nelson, B.C.; May 1907 to Mar. 1910, General Agent Passenger Department, Spokane, Wash.; Mar. 1910 to Dec. 1913, General Agent, Atlantic Steamships, Winnipeg. During 1914 he was on extended leave of absence.

A. F. HAWKINS, who has been appointed Trainmaster, Moose Jaw Terminals, C.P.R., was born in Kent, England, Aug. 9, 1884, and entered C.P.R. service, Oct. 23, 1903, since when he has been, to May 15, 1906, in various positions in yard office, Winnipeg; May 15, 1906, to Aug. 1, 1908, chief clerk, Fort William, Ont.; Aug. 1, 1908, to July 1, 1909, Assistant Yardmaster, Fort William, Ont.; July 1, 1909, to Apr. 1, 1911, General Yardmaster, Fort William, Ont.; Apr. 1 to Oct. 1, 1911, Night Yardmaster, Winnipeg; Oct. 1, 1911, to Aug. 15, 1914, General Yardmaster, Winnipeg; Aug. 15 to Dec. 31, 1914, Trainmaster, Medicine Hat, Alta.

GEORGE W. HAY, who has been appointed General Passenger Agent, Lehigh Valley Rd., New York, was born at Woodstock, Ont., May 29, 1869, and entered railway service, Oct. 13, 1888, since when he has been, to April, 1897, in train service, G.T.R., Detroit, Mich.; April to July, 1897, baggage inspector, G.T.R., Toronto; July, 1897, to July, 1902, chief clerk, General Baggage Agent, G.T.R., Toronto; July, 1902, to December, 1906, Assistant to General Baggage Agent, G.T.R., Toronto; January, 1907, to Nov. 24, 1914, General Baggage Agent and District Passenger Agent, Lehigh Valley Rd., South Bethlehem, Pa.

HENRY BEATTY, at one time Manager, Upper Lake Steamship, C.P.T., Toronto, who died there April 10, 1914, left an estate of \$707,734.78. Within a year prior to his death he had transferred \$106,605 to relatives, including Dr. H. A. Beatty, Chief Surgeon, Ontario Division, C.P.R., Toronto, son, \$27,750, E. W. Beatty, Vice President and General Counsel, C.P.R., Montreal, son, \$37,250, G. M. Beatty, son, \$18,236, M. H. Beatty, daughter, \$21,869. The widow is left an income for life on \$40,000. The three sons and the daughter each receive \$171,933.71, and \$40,000 is to be divided among them at their mother's death. Four nephews receive \$5,000 each.

C. H. BUELL, who has been appointed Staff Registrar, and Secretary of the Pension Fund, C.P.R., Montreal, was born at Jacksonville, Ill., Nov. 21, 1873, and entered C.P.R. service Sept. 1, 1895, since when he has been, to Oct. 1, 1896, secretary to General Passenger Agent; Oct. 1, 1896 to July 1, 1899, secretary to Passenger Traffic Manager; July 1, 1899 to Sept. 1, 1900, clerk to Assistant General Manager; Sept. 1, 1900 to Aug. 1, 1901, clerk to Second Vice President and General Manager; Aug. 1, 1901 to Nov. 1, 1906, chief clerk to Assistant to the Vice President; Nov. 1, 1906 to Mar. 1, 1907, clerk to Vice President McNicoll; Mar. 1, 1907 to Nov. 27, 1914, chief clerk to Vice President McNicoll.

OTTO H. BECKER, who was appointed District Freight Agent, C.P.R., Portland, Ore., recently, was born in Norfolk County, Ont., Nov. 19, 1873, and entered railway ser-

vice in April 1893, since when he has been, to July 1899, telegraph operator at various points, Canada Division, Michigan Central Rd.; Sept. 1899 to July 1901, telegraph operator and agent, Fort William, Ont., and Columbia and Western Division, C.P.R., at various points in British Columbia; July 1901 to Apr. 1906, Traveling Freight Agent, C.P.R., Nelson, B.C.; Apr. to Oct 1906, Travelling Freight Agent, C.P.R., Seattle, Wash.; Oct. 1906 to July 1914, General Agent, Freight Department, C.P.R., Tacoma, Wash.

E. W. BEATTY, who has been appointed Vice President and General Counsel, C.P.R., Montreal, was born at Thorold, Ont., Oct. 16, 1877. He was educated at the Model School and Harbord Collegiate, Toronto, and the University of Toronto, graduating in 1898. He served his articles with the late D'Alton McCarthy, of McCarthy, Osler, Hoskin and Creelman, Toronto, and was admitted to the bar in 1901. On the appointment of A. R. Creelman as Chief Solicitor C.P.R., in July 1901, he accompanied him to Montreal, and was appointed Assistant Solicitor, Jan. 1, 1905, General Solicitor,



P 314 Grant Hall,  
Vice President and General Manager, Western  
Lines, Canadian Pacific Railway.

Mar. 1, 1910, and General Counsel, June, 1913. He is a son of the late Henry Beatty, at one time Manager of the Upper Lakes Steamships, C.P.R., Toronto, and is a brother of Dr. H. A. Beatty, Chief Surgeon, Ontario Division, C.P.R., Toronto.

SIR WILLIAM VAN HORNE, SIR THOS. SHAUGHNESSY, and Hon. G. S. Perley, who were born in the United States, will, according to an Ottawa press dispatch, be the first to secure the full status of imperial citizenship under the provisions of the new naturalization act, which comes into effect in Canada. They will be the first to take out their papers, having already applied for naturalization. Under the present naturalization laws a person born in the United States and naturalized in Canada becomes a Canadian, but is not recognized as a British subject in the British Isles. British naturalization, however, is recognized in Canada. The new act removes this anomaly. Any persons who have lived in Canada five out of the past eight years may, after Jan. 1, become entitled to full imperial citizenship.

CHARLES ERNEST STOCKDILL, who has been appointed Assistant to Vice President and General Manager, C.P.R., Winnipeg, was born at London, Ont., Oct. 25, 1881, and entered C.P.R. service July 1, 1899, since when he has been, to Feb. 1, 1900, clerk, Roadmaster's office, London, Ont.; Feb. 1, 1900, to Apr. 30, 1901, clerk in Superintendent's office, London, Ont.; May 1, 1901, to June 15, 1903, secretary to General Superintendent, North Bay, Ont.; June 15, 1903, to Sept. 23, 1904, chief clerk to Master Mechanic, North Bay, Ont.; Sept. 24, 1904, to July 12, 1905, chief clerk to Superintendent, Winnipeg; July 12, 1905, to Feb. 28, 1907, chief clerk to General Superintendent, Calgary, Alta.; Mar. 1 to Dec. 1, 1907, assistant chief clerk to Assistant General Manager, Winnipeg; Dec. 1, 1907, to Sept. 30, 1908, assistant chief clerk to Second Vice President, Winnipeg; Oct. 1, 1908, to Aug. 9, 1910, chief clerk to Second Vice President, Winnipeg; Aug. 9, 1910, to Oct. 1, 1911, chief clerk to General Manager, Winnipeg; Oct. 1, 1911, to Dec. 31, 1914, chief clerk to Vice President and General Manager, and then to Vice President, Winnipeg.

LUCIUS TUTTLE, who died of angina pectoris, at Brookline, Mass., Nov. 30, was born at Hartford, Conn., Mar. 11, 1846, and entered railway service Aug. 1865, since when he was, to 1866, ticket clerk, and from 1866 to Oct. 1, 1878, General Ticket Agent, Hartford, Providence and Fishkill Rd.; Oct. 1, 1878 to Feb. 11, 1879, Assistant General Passenger Agent, New York and New England Rd.; Feb. 11, 1879 to Jan. 1885, successively, General Passenger and Ticket Agent, and Assistant to General Manager, Eastern Ry.; Jan. 1885 to Jan. 1887, General Passenger and Ticket Agent, Boston and Lowell Rd.; Jan. 1887 to 1889, Passenger Traffic Manager, C.P.R., Montreal; 1889 to May 1890, Commissioner, Trunk Line Association Passenger Department; May 1890 to Feb. 1892, General Manager, New York, New Haven and Hartford Rd.; Feb. 1892 to Sept. 1893, Vice President, same road; Oct. 1893 to Oct. 1910, President, Boston and Maine Rd.; 1910 to 1913, Chairman of the Board, same company. Mr. Tuttle had not been in good health since the amputation of a leg about three years ago, but he continued quite active until within about a week of his death.

D'ALTON CORRY COLEMAN, who has been appointed Assistant General Manager, Western Lines, C.P.R., Winnipeg, was born at Carleton Place, Ont., July 9, 1879, and entered C.P.R. service Nov. 4, 1899, since when he has been, to Jan. 11, 1900, stenographer in Assistant Engineer's office, Fort William, Ont.; Jan. 11 to July 1, 1900, secretary to Superintendent, Fort William, Ont.; July 1 to Sept. 20, 1900, secretary to General Superintendent, Winnipeg; Sept. 22, 1900 to Feb. 1, 1901, secretary to Superintendent, Fort William, Ont.; Feb. 1, 1901 to June 1, 1902, chief clerk, Superintendent's office, Cranbrook, B.C.; June 1, 1902 to Feb. 15, 1904, chief clerk and accountant, General Superintendent's office, North Bay, Ont.; Feb. 15, 1904 to Mar. 1, 1907, chief clerk, General Superintendent's office, Winnipeg; Mar. 1, to June 1, 1907, chief clerk, Assistant General Manager's office, Winnipeg; June 1, 1907 to Dec. 1, 1908, Superintendent, Nelson, B.C.; Dec. 1, 1908 to Apr. 1, 1912, Superintendent Car Service Western Lines, Winnipeg; Apr. 1, 1912 to July 15, 1913, General Superintendent, Manitoba Division, Winnipeg; July 15, 1913 to Jan. 1, 1915, General Superintendent, Alberta Division, Calgary.

G. H. WEBSTER, M. Can. Soc. C.E., who died at Vancouver, B.C., Dec. 27, 1914, was born at Creemore, Ont., Jan. 31, 1858, and entered railway service in May, 1872, since when he was, to Jan. 31, 1879, articulated pupil.



Northern Ry., Toronto; Jan. 31, 1879, to Apr., 1882, Assistant Engineer, Northern, and Hamilton and Northwestern Rys.; Apr., 1882, to Apr., 1883, in private practice in Winnipeg; June, 1883, to June, 1885, Assistant Engineer, Manitoba and North Western Ry.; June, 1885, to July, 1900, Engineer in charge, same road; July, 1900, to Oct., 1901, Resident Engineer, Main Line and Branches, Western Division, C.P.R., east of Moose Jaw, Sask.; Oct., 1901, to May, 1903, General Tie Agent, C.P.R., Montreal; May, 1903, to Jan., 1904, Right of Way and Lease Agent, C.P.R., Montreal; Jan., 1904, to Jan. 25, 1905, Division Engineer, C.P.R., Vancouver, B.C. In Jan., 1905, he retired from railway service to become President and Engineer of the British Columbia General Contract Co., Vancouver, from which he retired toward the end of 1908, after which he practised as a civil engineer and carried on contracting work on his own account. His name appears in "Birthdays of Transportation Men in January" on page 7 of this issue, which was printed before the news of his death reached us.

SENATOR ROBT. JAFFRAY, who died at Toronto, Dec. 16, aged 82, was at different times prominently connected with a number of transportation interests. In 1874, during the Mackenzie government's regime, he was appointed as the Dominion Government director of the old Northern Ry. of Canada, and on his representations a royal commission was appointed to investigate its affairs. With the late Senator G. A. Cox, he purchased the Midland Ry. of Canada, originally the Port Hope, Lindsay and Beaverton Ry., which they reorganized and sold to the Grand Trunk. He was a strong supporter of the late Geo. Laidlaw's projects, which did so much to make Toronto a railway centre. He was appointed a commissioner of the Timiskaming and Northern Ontario Ry. early in 1914, and on the retirement of the first chairman, A. E. Ames he succeeded him, retaining that office for about a year, until the Whitney Government came into power, when he resigned. He was one of the organizers of and among the first directors of the Crowsnest Pass Coal Co., which built the Morrissey, Fernie and Michel Ry. in British Columbia. He was one of the spectators when the first locomotive built in Toronto was taken from Good's foundry to the Northern Ry. tracks on the Bay front. Among the many directorates of which he was a member up to the time of his death were those of the Canadian General Electric Co., the Nova Scotia Steel and Coal Co., the Imperial Bank and the Globe Printing Co., Toronto.

**Free Transport for Hosmer People.**—Application was made to the Board of Railway Commissioners at Victoria, B.C., Dec. 2, for an order authorizing the C.P.R. to carry free of charge such of the residents of Hosmer as desired to remove to some other place. Hosmer was a C.P.R. mining town, but with the abandonment of the collieries a large number of people were left stranded and without employment. The C.P.R. was willing to carry them elsewhere free. The Commissioners said there would be no objection made to the carrying out of any arrangement which the C.P.R. and the B.C. Government might make in the matter. A suggestion was made that a special 5c. tariff should be issued to meet the necessity, but it was pointed out that any such rate would be open to anyone at Hosmer who applied. A further suggestion was made that the C.P.R. could carry persons free under sec. 41 of the Railway Act, but it was pointed out that while the people to be benefitted in Hosmer were practically without money, they were neither the destitute nor homeless persons contemplated in the act.

## Great North-Western Telegraph and Canadian Northern Telegraph Companies Merge.

The Great North Western Telegraph Co. of Canada and the Canadian Northern Telegraph Co. have been merged, and from Jan. 1 will be operated under one system as the Great North Western Telegraph Co. of Canada. Under the arrangement the Western Union Telegraph Co.'s lines in New Brunswick, from Moncton east, and in the United States, will in the near future become part of the G.N.W. system, except the direct lines from the International Boundary between Maine and New Brunswick to the Atlantic cable landing stations at Canso and North Sydney, N.S., which will be retained by the W.U.

This means that the G.N.W.T. Co., heretofore controlled, if not entirely owned by the Western Union, a U.S. organization, has passed under Canadian ownership. While neither the Canadian Northern, nor the G.N.W. managements have made any official statement to that effect, Canadian Railway and Marine World is in a position to state that the W.U. holdings in the G.N.W. have been bought by Canadian Northern Ry. interests.

Z. A. Lash, K.C., who is a director and Senior Counsel of the C.N.R. and who, since the death of H. P. Dwight in 1912, has been President of the G.N.W.T. Co., remains in that position, and G. D. Perry continues as General Manager, the executive officers remaining at Toronto. W. C. Muir, now General Superintendent, Canadian Northern Telegraph Co. and Canadian Northern Express Co., at Winnipeg, will in future confine himself to the General Superintendency of the latter company.

The following appointments of district superintendents of the G.N.W.T. Co. have been made:

L. S. Humes, Superintendent 2nd district, and will continue to act as Manager, Montreal office.

W. G. Barber, Toronto, heretofore Assistant Manager, local office, Toronto, to be Superintendent 3rd district. Office, Toronto.

J. Paddington, to be Superintendent 4th district, and will continue as Manager, Winnipeg office.

G. H. Stead, heretofore Superintendent at Winnipeg, Canadian Northern Telegraph Co., to be Superintendent 5th district, G.N.W.T. Co. Office, Saskatoon.

The merger will give the G.N.W.T. connection, through Canadian territory, with Manitoba, Saskatchewan, Alberta and British Columbia, which it has had to reach hitherto from Eastern Canada via W.U. lines through the U.S., and will give the Canadian Northern Telegraph access to places served by the G.N.W. and W.U. throughout Ontario, Quebec and the Maritime Provinces. The combination will have over 1,700 offices in Canada. There will be a friendly alliance with the Western Union, which will give the Canadian combination access to some 22,000 W.U. offices in the U.S. and with 8 trans-Atlantic cables, 6 of which land in Canada.

The principal lines hitherto operated by the G.N.W.T. Co. are owned by the Montreal Telegraph Co. and the Dominion Telegraph Co. The Montreal Telegraph Co. was incorporated by the Legislature of Canada in 1847, to build lines in Canada and the U.S. Its lines are maintained and operated by the G.N.W.T. Co. under a lease for 97 years, from July 1, 1881. Its capital stock, authorized and issued, is \$2,000,000. Dividends of 8% are paid under guarantee from the G.N.W.T. and the W.U. companies.

The Dominion Telegraph Co. was organ-

ized in 1868, and its lines are leased for 99 years, from July 1, 1879, to the W.U.C., which sublets the lines west of Moncton, N.B., to the G.N.W.T. Co., and operates those in N.B., east of Moncton and in Nova Scotia, under its own name. Its capital authorized and paid is \$1,000,000. Dividends of 6% a year are paid quarterly, the rental paid by the W.U. under the lease being equivalent to the dividends.

The Great North Western Telegraph Co. of Canada was incorporated by the Dominion Parliament in 1880, one of its principal promoters being E. P. Leacock, an Englishman, who a year previously went from Ontario to Manitoba, where he had a meteoric career as a real estate speculator, member of the Legislature, etc., for a few years, after which he returned to England. He interested a number of Winnipeg and Toronto people in the project, and one of the incorporators was the late Hon. John Norquay, then Premier of Manitoba.

Following is a copy of the original notice of application for incorporation of the company which appeared in the Canada Gazette:

"Notice is hereby given that an application will be made to the Parliament of Canada at its next session for an act to incorporate the Great Western Telegraph Co. of Canada and to confer on such company corporate rights with powers to build, lease and purchase lines, and to maintain lines for others, and to carry on the business of telegraphing in the provinces of Manitoba, British Columbia and Ontario, the district of Keewayden, the Northwest Territories and elsewhere, with power to amalgamate with any other company or companies.

"Acton Burrows, agent for applicants.

"Winnipeg, Dec. 3, 1879."

It was subsequently decided to change the name to the Great North Western Telegraph Co. of Canada, and the act of incorporation was passed accordingly.

The company, which had its first headquarters in Winnipeg, built and operated a few local lines in Manitoba. Its act of incorporation was a comprehensive one, giving very wide powers, and in 1881, when the Western Union wanted to amalgamate the Montreal and Dominion Telegraph Companies' properties, it bought out the G.N.W.T. Co.'s shareholders' interests and acquired the charter. Its operations hitherto have been confined to New Brunswick, Quebec and Ontario, with a small mileage in Manitoba connecting with the W.U. lines at the International Boundary, and also a small mileage at different points near the border in the United States.

The Canadian Northern Telegraph Co., a subsidiary of the Canadian Northern Ry. Co., was organized June 30, 1902. It has an issue of \$800,000 first mortgage bonds and \$500,000 common stock. Its operations follow more or less closely the C.N.R. lines in Ontario, Manitoba, Saskatchewan and Alberta.

Following are statistics of the merged companies as at June 30, 1913:—

	Great North Western.	Canadian Northern
Capital stock .....	\$500,000.00	\$500,000.00
Funded debt .....	.....	\$800,000.00
Revenue from operation .....	\$1,244,302.67	\$276,739.70
Operating expenses ..	\$911,884.98	\$141,742.68
Net earnings ...	\$332,417.69	\$134,997.02
Pole mileage .....	9,409.00	5,013.10
Wire mileage .....	32,858.00	16,343.50
No. of land messages ..	4,225,219	554,393
No. of cablegrams ...	301,147	1,970
No. of operators .....	1,632	46
Other officers and employees .....	375	127
Salaries and wages ..	\$546,382.82	\$105,993.31

Inverness Ry. and Coal Co.'s October statement is the best since war was declared. The production was 26,140 tons of coal, against 27,520 in October, 1913.



### National Transcontinental Railway Construction.

The Minister of Railways made an inspection of the N.T.R. from Quebec to Lake Superior Jct., Ont., early in December. The section of the line from Moncton to Levis is being operated under the Canadian Government Railway's management, and the section between Lake Superior Jct. and Winnipeg is being operated by the G.T. Pacific Ry., under an arrangement with the Department. The intervening mileage from Quebec to Lake Superior Jct. is practically completed, and local services are being given over the various sections. It is expected that arrangements will be completed for the operation of through traffic in the spring. (Dec., 1914, pg. 548.)

### Grand Trunk Pacific Railway Construction.

We are officially advised that during 1914 grading was practically confined to the main line, and even this was completed by the spring of the year. Tracklaying was continued on the main line and several of the branches, and in all about 190 miles were laid, exclusive of second track, sidings, ballast pits, etc. A short resurvey of a portion of the Wattsvie Boundary Branch was made.

**Main Line.**—The entire grade was completed in the early part of the year. Track was laid westerly from mile 1265 to 1374. On April 7 connection was made with track laid easterly from mile 324 east of Prince Rupert to mile 372. The entire line was also ballasted, and is in operation throughout. The grading for Prince Rupert terminals has been practically completed, and the construction of roundhouse and divisional point facilities is under way at Prince George, Endako, Smithers and Pacific. The divisional point at McBride has been installed with a very modern equipment. This completes the terminals on the line, with the exception of Prince Rupert, for which immediate plans are under consideration. Fuel oil facilities in lieu of coal are being prepared for at the divisional points in British Columbia. The following steel bridges were completed during the year:—  
Little Shuswap crossing, mile 1101—one span.  
3rd crossing Fraser River, mile 1231—950 ft.  
Willow River, mile 1262—450 ft.  
4th crossing Fraser River at Prince George (combination railway and highway bridge—2650 ft.)  
Mud River, mile 1292—160 ft.  
Upper Nechaco crossing, mile 1373—675 ft.  
Endako River crossing, mile 1386—one span.  
Endako River crossing, mile 1403—one span.  
Bulkley River crossing, mile 1481—one span.  
Bulkley River crossing, mile 1486—350 ft.  
Also 12 bridges each consisting of one span over fast mountain streams running into the Skeena River east of Prince Rupert.

**Harte-Brandon Branch**—Length 25 miles. No work was done during the year. Grading is completed to mile 21.85. The substructure for the steel bridge, consisting of two spans (450 ft.) was completed, but steel not yet erected, although on the ground.

**Talmage-Weyburn Branch**—Length 15 miles. Track was laid during the year, and the branch put in operation.

**Prince Albert Branch**—Length 111.5 miles. Grade is completed throughout, and track laid to mile 87.2, this being at the southern approach to the bridge over the South Saskatchewan River, which will be 1,200 ft. long and will consist of six spans. The substructure has recently been completed, ready for erection of steel. The branch is in operation to mile 87.2.

**Cutknife Branch**—Length 50 miles. Tracklaying was completed from mile 33

during the year. The line is in operation from mile 0 to 33.

**Moose Jaw North West Branch**—Length 67.86 miles. This branch is completed for 67 miles northwest of Moose Jaw and is in operation. A steel under crossing with the C.P.R. at the western boundary of Moose Jaw was built during the year.

The question of the terminals in Moose Jaw, Sask., came before the Board of Railway Commissioners, Dec. 11, when an extension of time was granted for the deposit of plans for the laying out of the exhibition ground site for terminal purposes. This site is being acquired from the city upon liberal terms.

The Board also had before it on the same day the question of spur tracks to the government grain elevator at Moose Jaw. The C.P.R. is the only line at present connected with the elevator, and plans were submitted showing a spur which would enable the G.T.P.R. and the Canadian Northern Ry. to have connection. The commissioners took the plans under consideration.

A contract has been let to Nettleton-Bruce-Eshbach Co., Seattle, Wash., for the erection of a dock at Seattle, to replace the one destroyed by fire, June 30, 1914. A full description of it is given in the Marine Department, further on in this issue. (Dec., 1913, pg. 548.)

## Grain in Store at Terminal Elevators, Interior Terminal Elevators and at Public Elevators in the East

The following figures have been compiled by the Trade and Commerce Departments, from official reports received by it:—

Week ended Dec. 17, 1914.					
	Wheat.	Oats.	Barley.	Flax.	Totals.
	Bushels.	Bushels.	Bushels.	Bushels.	Bushels.
Fort William:—					
C.P.R. ....	205,639	73,474	17,753	3,547	300,413
Consolidated .....	219,987	123,806	37,806	59,314	440,913
Empire Elevator Co. ....	189,569	228,064	21,150	53,603	492,386
Ogilvie Flour Mills Co. ....	336,921	55,895	8,764	....	401,580
Western Terminal Elevator Co. ....	220,035	59,106	10,410	202,507	492,058
G.T. Pacific .....	514,100	323,480	22,318	63,690	923,588
Grain Growers' Grain Co. ....	942,998	231,413	49,364	....	1,223,775
Fort William Elevator Co. ....	168,223	89,672	24,926	23,668	306,489
Eastern Terminal Elevator Co. ....	83,814	78,959	5,466	....	167,549
Port Arthur:—					
Port Arthur Elevator Co. ....	618,701	421,909	62,372	45,261	1,148,243
D. Horn & Co. ....	16,279	8,247	....	29,770	54,316
Dominion Government Elevator .....	292,683	115,364	9,847	54,173	472,067
<b>Total Terminal Elevators .....</b>	<b>3,808,259</b>	<b>1,809,389</b>	<b>270,176</b>	<b>535,553</b>	<b>6,423,377</b>
Saskatoon Dominion Government Elevator	444,436	589,140	11,715	....	1,015,291
Moosejaw Dominion Government Elevator	1,298,455	293,497	12,185	190	1,604,327
<b>Total Interior Terminal Elevators..</b>	<b>1,742,891</b>	<b>852,637</b>	<b>23,900</b>	<b>190</b>	<b>2,619,618</b>
Depot Harbor .....	....	101,050	....	....	101,050
Midland:—					
Aberdeen Elevator Co. ....	536,016	247,897	....	....	783,913
Midland Elevator Co. ....	....	....	....	....	....
Tiffin, G.T.R. ....	1,301,135	858,788	....	....	2,159,923
Port McNicoll .....	3,148,749	783,551	....	97,729	4,030,029
Collingwood .....	36,025	....	....	....	36,025
Meaford .....	*362,433	*158,141	....	*33,417	*553,991
Goderich .....	852,190	124,377	....	....	976,567
Point Edward .....	....	....	....	....	....
Quebec Harbor Commissioners .....	2,005	54,032	....	....	56,037
Kingston:—					
Montreal Transportation Co. ....	15,076	17,039	16,267	....	48,382
Commercial Elevator Co. ....	2,792	97,459	....	....	100,251
Port Colborne .....	945,472	324,088	108,036	*83,387	1,460,983
Prescott .....	....	....	....	....	....
Montreal:—					
Harbor Commissioners no. 1 .....	338,574	....	9,067	37,830	385,471
Harbor Commissioners no. 2 .....	385,382	748,142	67,373	43,889	1,244,786
Montreal Warehousing Co. ....	64,277	382,927	200,289	37,472	684,965
St. John, N.B. ....	....	....	....	....	....
West St. John, N.B. ....	822,041	445,453	....	....	1,267,494
<b>Total Public Elevators .....</b>	<b>8,812,167</b>	<b>4,342,944</b>	<b>401,032</b>	<b>250,337</b>	<b>13,889,867</b>
<b>Total quantity in store .....</b>	<b>14,363,317</b>	<b>7,004,970</b>	<b>695,108</b>	<b>786,080</b>	<b>22,932,862</b>
*Grain afloat in vessels. †Corn.					

**Kettle Valley Lines.**—Press reports state that construction is so far advanced that it is expected to have the line ready for operation through to the Fraser River, where connection will be made with the C.P.R., by the end of next summer. (Dec., 1914, pg. 544.)

**The Intercolonial Ry. Efficiency Association** of Cape Breton has been formed by I.R.C. employees in that portion of Nova Scotia, its officers being W. A. Fitch, Assistant Superintendent, Sydney, President; A. S. Prowse, Vice President; D. McGillivray, Secretary; R. J. McNeil, C. Scothorn, N.

McKinnon and N. Johnston, executive committee.

**Grain and Dried Beans Tariffs on Michigan Central Rd.**—The Interstate Commerce Commission has decided that increased rates on dried beans and grain from points on the Detroit and Mackinac Ry., to points on the Michigan Central Rd. and its connections, which would result from the cancellation by the M.C.R. of transit rules and charges applicable to such traffic, are not justified.



## Veneered Steel Interior Finish for Passenger Cars on the Canadian Pacific Railway.

A suitable interior finish for passenger cars has been one of the problems which railways and car builders have been endeavoring to solve for some time and more especially since the advent of steel car construction. A suitable finish should in a general way possess the following qualities: Lightness, strength, durability, pleasing to the eye, poor conductor of heat, occupy a

very cold and noisy, and corrodes on the unexposed side.

It seems that the question of a suitable interior finish has been solved by the C.P.R. use of veneered steel. The veneer is of varying dimensions, from 1-18th of an inch up, depending on the severity of service which is governed by the location in car and class of car.

deteriorate and is now in service on about 60 cars and its use has been arranged for on dining, sleeping, and all passenger carrying cars.

In the construction of doors, bulkheads, panels, etc., the veneer is used on each side of the steel and in this way oak can be used on one side and mahogany on the other, or any other class of wood that is desired.

In the accompanying illustration, all of the wood in sight in the bulkhead, smoking room partition, etc., is of thin veneer, except the casings for the door frame and the moulding. This veneered steel finish is the



Mahogany Veneered Steel Bulkhead on C.P.R. Cars.



Mahogany Veneered Steel End Door.

minimum of space and be fire resisting.

An all wood interior finish is bulky, and does not seem to be in harmony with modern car construction. While it is possible by using great care to make a clever imitation of wood by using steel interior finish, the mere fact that wood is imitated would seem to indicate that it is the desirable finish, but with the use of steel there are many disadvantages that do not seem to be much nearer solution than when steel was first used. The steel surface is often wavy, even when new, particularly on flat surfaces, it is easily dented and the dents or buckles cannot be easily removed. It is

This veneered steel is used in the construction of doors, panels, wainscot, bulkheads, sleeping car berths, sleeping car seat ends, etc., and is of approximately the same cost as steel or wood. It is claimed that it has the insulating effect of wood, is not subject to corrosion the same as steel alone, does not splinter in wrecks, is fire resisting and can be made attractive to the extent that one cares to go into the use of beautiful veneers, and that it combines all the good points of wood and steel with none of the disadvantages of either. It is not an experiment, as it has been used sufficiently long to know that it does not

invention of R. W. Burnett, General Master Car Builder, C.P.R., Montreal.

**C.P.R. Montreal-Chicago Service.**—The C. P.R., on Dec. 14, started the operation of its through trains between Montreal and Chicago, over the Lake Shore route east of Toronto, which became available with the opening of the Campbellford, Lake Ontario and Western Ry. Sir Thos. G. Shaughnessy and a party of directors, made a trip over the line the same day.

An all steel caboose has been built by the Pennsylvania Rd., and is being tried experimentally on various divisions.



# Canadian Railway AND Marine World

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## NOTICE TO ADVERTISERS.

ADVERTISING RATES furnished on applica-  
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ADVERTISING COPY must reach the pub-  
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TORONTO, CANADA, JANUARY, 1915.

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## Steam Railway Track Laid in 1914.

In pursuance of its annual practice Cana-  
dian Railway and Marine World issued cir-  
culars on Dec. 1, to all railway companies  
in Canada, asking information as to new  
track laid during 1914. The following  
table gives a preliminary statement of the  
new track laid. In a number of cases the  
figures given have been estimated either  
by the railway companies, or in our own  
offices, pending the receipt of the final fig-  
ures for the year. Estimated figures are  
distinguished by an asterisk.

The total new single track laid during 1914,  
so far as can be ascertained and estimated,  
is 2,088.09 miles. This is less by 1,180.46  
miles than the final corrected total mileage  
of track laid in 1913, and less by 141.38  
miles than the corrected figures of track  
laid in 1912. This is entirely to be account-  
ed for by the fact that the National Trans-  
continental Ry. and the Grand Trunk Paci-  
fic Ry. main line from Moncton, N.B., to  
Prince Rupert, B.C., 3,552 miles, have been  
completed, and that the only big trunk line  
construction in progress is the Canadian  
Northern Ry., which is now practically  
completed across the continent. The con-  
struction of branch lines by the C.P.R., the  
Canadian Northern Ry., and the G.T. Pacific  
Ry. maintains the average of recent years.  
Outside these lines the largest construction  
in progress are the lines under construc-  
tion largely on the initiative of the British  
Columbia and Alberta Governments, which  
are to be operated under agreements with  
the G.T. Pacific Ry. These are the Pacific  
Great Eastern Ry., from Vancouver to the  
B.C.-Alberta boundary; the Edmonton, Dun-  
vegan and British Columbia Ry., from Ed-  
monton to a junction with the last railway;  
the Alberta and Great Waterways Ry., and  
the Central Canada Ry. On the first three of  
these lines 351 miles of track were laid in  
1914, and 30 miles of grading is ready for  
tracklaying on the last named.

Following are the details of track laid on  
the several lines:—

	Miles.	Miles
<b>Alberta and Great Waterways Ry.</b>		
Carbondale to Lac La Biche	114.00	
<b>Canadian Northern Ontario Ry.</b>		
Between Montreal and Gren- ville	39.00	
Between Ottawa and Capreol	130.00	
		169.00
<b>Canadian Northern Ry.</b>		
Birds Hill to Pt. Grand		
Marias, Man.	50.77	
Chatfield northerly	27.08	
Laird northerly	8.67	
C. N. A. Ry., Yellowhead easterly	2.48	
C. N. Western, Stolberg- Brazeau	17.44	
		106.11
<b>Canadian Northern Pacific Ry.</b>		
Various sections between Port Mann and Yellowhead Pass, in B.C.		248.00
<b>Canadian Pacific Ry.</b>		
Quebec		
Forsyth St. branch, Mont- real	0.61	
Interprovincial and James Bay Ry., mileage 7.5 to 9.87 Kewawa north	2.37	
Ontario		
Trenton freight spur	1.11	
Manitoba		
Gimli to Riverton	26.30	
Saskatchewan		
Weyburn-Lethbridge line	87.00	
Moose Jaw South West line	22.40	
Kerrobert to Sask. bound- ary	50.00	
Alberta		
Monitor to Alberta-Sask. boundary	22.00	
Empress to Westerham	18.00	
Empress to Bassano	118.30	
Suffield S. W., m. 57 to 84	27.00	
Coronation to Lorraine	16.70	
Gleichen to Shepard	12.50	
Alberta Central Ry. between Red Deer and m. 64.50	32.00	
British Columbia		
Kootenay Central Ry., Edge- water to Kootenay River	68.30	
		508.60

<b>Dominion Atlantic Ry.</b>		
Centerville to Weston, N.S.	14.80	
<b>Edmonton, Dunvegan and B.C. Ry.</b>		
Smith to McLennan	131.00	
<b>Erie and Ontario Ry. (T., H. &amp; B. R.)</b>		
Smithville to Dunville, Ont.	14.90	
<b>Esquimalt and Nanaimo Ry.</b>		
Big Qualicum to Courtenay		
B.C.	29.70	
<b>Essex Terminal Ry.</b>		
Extension to Ojibway, Ont.	1.00	
<b>Glengarry and Stormont Ry.</b>		
St. Polycarpe, Que., to Corn- wall, Ont.	28.00	
<b>Grand Trunk Pacific Ry.</b>		
Shelley to Tintagel, B.C.	157.30	
Talmage to Weyburn, Sask.	14.50	
Central Butte to Riverhurst, Sask.	17.60	
Rossman to Carruthers, Sask.	15.30	
		194.70
<b>* Hudson Bay Ry. (Dominion Government).</b>		
Mileage 36 to 175	139.00	
<b>* Kettle Valley Lines.</b>		
Extensions	60.00	
<b>* Lake Erie and Northern Ry.</b>		
Brantford to Galt, Ont.	29.00	
<b>Pacific Great Eastern Ry.</b>		
Mileage 13.50 from Squamish, B.C., to m. 120	106.00	
<b>* Prince Edward Island Ry.</b>		
Carleton Point spur	2.50	
<b>Quebec Central Ry.</b>		
Extension east of St. Camille, Que.	5.00	
<b>St. John and Quebec Ry.</b>		
Fredericton to Woodstock, N.B.	24.98	
Fredericton to Gagetown	3.51	
Woodstock to Centreville	1.50	
		29.99
<b>Vancouver, Victoria and Eastern Ry.</b>		
Coalmount to Brooks, B.C.	25.56	
<b>Winnipeg Water District.</b>		
St. Boniface to Shoal Lake, Man.	85.00	

In connection with the figures for the Grand  
Trunk Pacific Ry., we were advised, Dec. 18,  
that track was actually laid in 1913 to mile-  
age 1,265 west of Winnipeg, and to mileage  
324 east of Prince Rupert, making 14 miles  
more than was covered in the figures pub-  
lished in our issue of Feb., 1914, as having  
been laid in 1913. The information that  
this mileage was laid was received at the  
company's office too late to be used at the  
date the figures published were supplied us.  
The track laid as reported this year, 157.3  
miles, and the 14 miles referred to, totals  
171.3 miles, which makes the difference  
between mileage 1,260 west of Winnipeg,  
and mileage 315 east of Prince Rupert, the  
points reported to have been reached in  
our report of February last.

The Great Northern Ry., during 1914, laid  
track on 23 miles of the line from Wenet-  
chee to Oroville, Wash., where it connects  
with one of the U.S. links of the Van-  
couver, Victoria and Eastern Ry. The re-  
maining 112.88 miles of the line were laid  
in 1912 and 1913.

The Reid Newfoundland Co. laid the fol-  
lowing mileage of track on its branch  
lines under construction:—Fortune Bay  
branch, 27 miles; to complete Bay-de-Verde  
branch, 6 miles; total, 33 miles.

## Index to Canadian Railway and Marine World for 1914.

At the end of this issue is a very complete  
index to the contents of the volume for 1914,  
which, as in former years, will doubtless be  
fully appreciated by the large number of  
subscribers who bind Canadian Railway and  
Marine World for reference purposes.

Even a casual glance over the six pages  
of closely printed matter will show the tre-  
mendous range of subjects covered and the  
thorough manner in which this paper repre-  
sents the entire transportation interests of  
the whole Dominion, steam railway, electric  
railway and marine, as well as the subsidi-  
ary express and telegraph interests, and  
railway and canal contracting work.



## Transportation Appointments Throughout Canada.

All notices under this head, which is almost entirely gathered from official sources, is compiled with the greatest care, so as to ensure accuracy. Anyone who may call any error in our announcements will confer a favor by advising us.

**Canadian Northern Ry.**—J. BARBOUR has been appointed Chief Claim Agent in charge of personal injury, property damage, fire and stock claims, for Eastern Lines, reporting to L. C. Fritch, Assistant to President. Office, Toronto.

THOMAS HOWELL, Immigration Commissioner, Toronto, has resigned.

**Canadian Pacific Ry.**—GEORGE BURY, heretofore Vice President, at Winnipeg, in charge of Western Lines, has been elected a director and Vice President of the company, succeeding D. McNicoll, senior Vice President, resigned. His jurisdiction extends over the whole system.

E. W. BEATTY, heretofore General Counsel, has been appointed Vice President and General Counsel. Office, Montreal.

JAMES MANSON, heretofore Assistant to Vice President Bury at Winnipeg, will, it is stated, be his Assistant at Montreal.

C. H. BUELL, heretofore chief clerk to Vice President McNicoll, Montreal, has been appointed Staff Registrar, and in addition to acting as Secretary of the Pension Department, will have charge of the company's staff records. Office, Montreal.

B. A. POTTER, heretofore dispatcher, Woodstock, N.B., has been appointed acting Chief Dispatcher, there, vice I. B. Merriman, promoted.

I. B. MERRIMAN, heretofore Chief Dispatcher, Woodstock, N.B., has been appointed Assistant Superintendent, District 1, Atlantic Division. Office, Brownville Jct., Me.

C. A. MURDOCK, heretofore Car Inspector, Outremont, Que., has been appointed Car Foreman, Three Rivers, Que., vice R. Lilly transferred.

G. H. MCCLELLAND, heretofore Car Foreman, Ottawa, Ont., has been appointed Car Foreman, Place Viger, Montreal, vice G. H. Turner, transferred.

R. LILLY, heretofore Car Foreman, Three Rivers, Que., has been appointed Night Car Foreman, Place Viger, Montreal, vice E. Minshell, assigned to other duties.

G. H. TURNER, heretofore Car Foreman, Place Viger, Montreal, has been appointed Assistant Car Foreman, Outremont, Que., vice R. D. C. Weldon, transferred.

R. D. C. WELDON, heretofore Assistant Car Foreman, Outremont, Que., has been appointed Car Foreman, Sortin Yard, Montreal, vice M. I. Miller, assigned to other duties.

S. GORDON has been appointed Foreman Locomotive Store Orders, Angus Shops Montreal, vice F. G. Goddard.

A. KEYWORTH, heretofore Assistant Foreman, Ottawa, Ont., has been appointed Night Foreman, there, vice H. Hymers, assigned to other duties.

T. G. GALLAGHER, heretofore a fitter, has been appointed Assistant Foreman, Ottawa, Ont., vice A. Keyworth, promoted.

GRANT HALL, heretofore General Manager, Western Lines, has been appointed Vice President and General Manager, vice George Bury, whose new appointment is referred to above. He reports to Mr. Bury.

D'ALTON C. COLEMAN, heretofore General Superintendent, Alberta Division, Calgary, has been appointed Assistant General Manager, Western Lines. Office, Winnipeg.

C. E. STOCKDILL, heretofore chief clerk to Vice President, has been appointed Assistant to the Vice President and General Manager. Office, Winnipeg.

J. A. DeWOLFE, heretofore chief clerk, Engineering Department, has been appointed chief clerk to Vice President and General Manager. Office, Winnipeg.

A. HALKETT, heretofore Trainmaster, Moose Jaw Terminals, has been appointed Superintendent, District 1, Manitoba Division, vice W. A. Mather, transferred. Office, Kenora, Ont.

E. ASHWORTH, heretofore Storekeeper, Minnedosa, Man., has been appointed night clerk, Winnipeg.

T. W. COOKE has been appointed Storekeeper and Timekeeper, Minnedosa, Man., vice E. Ashworth, Storekeeper, transferred.

H. A. SEWELL has been appointed Storekeeper, Broadview, Sask., vice P. J. Murphy, transferred.

A. F. HAWKINS, heretofore Trainmaster, District 1, Alberta Division, Medicine Hat, has been appointed Trainmaster, Moose Jaw Terminals, vice A. Halkett, promoted.



P364 D'Alton C. Coleman,  
Assistant General Manager, Western Lines,  
Canadian Pacific Railway.

F. REID, heretofore charge hand, has been appointed Car Foreman, Weyburn Sask., vice C. H. Zerbach, dismissed.

J. M. COLES has been appointed Storekeeper, Swift Current, Sask., temporarily, vice G. O. Jackson, who has enlisted for active military service.

J. B. A. DESALEUX, heretofore Storekeeper, Wilkie, Sask., has been appointed Storekeeper, Assiniboia, Sask., and his former position has been abolished.

A. E. STEVENS, heretofore Assistant General Superintendent, British Columbia Division, Vancouver, has been appointed General Superintendent Alberta Division, vice D'Alton C. Coleman, promoted. Office, Calgary.

A. MALLINSON, heretofore District Master Mechanic, Cranbrook, B.C., has returned to Ogden shops, Calgary, Alta., as machinist.

W. A. MATHER, heretofore Superintendent, District 1, Manitoba Division, Kenora, Ont., has been appointed Superintendent, District 1, Alberta Division, vice J. M. Cameron, promoted. Office, Medicine Hat.

J. N. MURPHY, heretofore engineer on construction, has been appointed Trainmas-

ter, District 1, Alberta Division, vice A. F. Hawkins, transferred. Office, Medicine Hat.

G. M. LANG has been appointed Roadmaster in charge of Coronation Subdivision, vice W. E. Lissiman. Office, Coronation, Alta.

P. J. MURPHY, heretofore Storekeeper, Broadview, Man., has been appointed Storekeeper, Crowsnest, B.C., vice E. J. Burke who has left the service.

W. J. MANLEY, heretofore Chief Dispatcher, Lethbridge, Alta., has been appointed Chief Dispatcher, Cranbrook, B.C., vice W. E. Cline.

W. McINNIS, heretofore General Yardmaster, Vancouver, B.C., has been appointed Yardmaster, Kamloops, B.C.

A. P. HUNTER has been appointed Storekeeper, Coquitlam, B.C., vice C. Bradley, resigned.

J. EDWARDS, heretofore Night Yardmaster, Coquitlam, B.C., has been appointed Yardmaster, there, vice D. Nicks, promoted.

D. NICKS, heretofore Yardmaster, Coquitlam, B.C., has been appointed General Yardmaster, Vancouver and Coquitlam, B.C.

J. M. CAMERON, heretofore Superintendent, District 1, Alberta Division, Medicine Hat, has been appointed Assistant General Superintendent, British Columbia Division, vice A. E. Stevens, promoted. Office, Vancouver.

E. RALSTON, heretofore Assistant Yardmaster, Vancouver, B.C., has been appointed Yardmaster, there, and his former position has been abolished.

**Canada Steamship Lines, Ltd.**—See under "Changes in Organization, Canada Steamship Lines, Ltd.," in Marine Department on page 34.

**Central Vermont Ry.**—W. GILLESPIE heretofore Master Car Builder, has been appointed Mechanical Superintendent in charge of Motive Power and Car Departments, reporting to the President, and his former position has been abolished. The position of Superintendent of Motive Power and Master Mechanic, heretofore held by T. A. Summerskill and J. E. Fitzsimons, respectively, have also been abolished, and the holders have been assigned to other duties. Office, St. Albans, Vt.

J. DUGUID has been appointed Assistant Mechanical Superintendent (Motive Power Department). Office, St. Albans, Vt.

J. E. MAUN has been appointed acting Assistant Superintendent, Montpelier, Barre and Williamstown Lines including Montpelier Jct., in charge of transportation. Office, Montpelier, Vt.

**Erie Rd.**—S. J. SHARP, who has been appointed Canadian Passenger Agent, at Toronto, as announced in our last issue, has been assigned the Province of Ontario as territory.

**Grand Trunk Pacific Ry.**—E. HACKING, heretofore General Car Foreman on the line, has been appointed General Foreman, Transcona Shops, Man., vice L. E. Burnsville, resigned to enter other service.

W. MILLS has been appointed General Car Foreman on the line, vice E. Hacking promoted.

G. I. ROOT has been appointed Inspector of Track, with jurisdiction from Fort William, Ont., to Prince Rupert, B.C., including branch lines.

The following station agents have been appointed,—Juniata, Sask., F. H. Keefe; Reford, Sask., E. D. Young; Ryley, Alta., G. S. Bass; Stoney Plain, Alta.; J. W. McCulla; Three Hills, Alta., J. R. McKeegan.

**Grand Trunk Ry.**—The Freight Claim Agent's office has been placed under the jurisdiction of the Controller, W. H. ARDLEY. All loss and damage claims and correspondence relating thereto, should, as heretofore, be addressed to the Freight Claim Agent, E. ARNOLD, Montreal.



J. W. CROOKS, heretofore in Michigan Central Rd. service, has been appointed Night Yardmaster, London, Ont., vice J. Munnings.

F. W. WARREN, heretofore Locomotive Foreman, Coteau, Que., is reported to have been appointed Locomotive Foreman, Southwark, Montreal, vice D. Ross, transferred to Western Lines.

ANGUS GORDON, formerly Assistant Manager, King Edward Hotel, Toronto, has been appointed Manager, Chateau Laurier, Ottawa.

E. S. COOPER has been appointed Trainmaster, District 5, Belleville Division, Eastern Lines, vice W. J. Nixon, assigned to other duties. Office, Montreal. Brockville station and yard will hereafter be under the jurisdiction of the Trainmaster of District 6.

M. LEINWEBER, heretofore in the Bridge and Building Department, has been appointed Bridge and Building Foreman, Stratford, Ont., vice F. J. Holman, retired under pension rules.

JOHN A. FICKEL has been appointed Car Foreman, Fort Erie, Ont., vice D. C. Messeroll, assigned to other duties.

D. C. MESSEROLL, heretofore Car Foreman, Fort Erie, Ont., has been appointed General Travelling Car Inspector, Ontario Lines, and including Districts 8, 9 and 10 Eastern Lines, vice T. Rogers, retired under pension rules. Office, London, Ont.

The following station agents have been appointed,—Uthoff, Ont., J. A. Payne; Beamsville, Ont., J. Butler; Burgessville, Ont., C. W. Vail; Rose Point, Ont., C. Arnold; Suspension Bridge, N.Y., J. S. Chenial; outside agencies,—Montreal, M. O. Dafoe; Sherbrooke, Que., C. A. Harrison.

**Hudson Bay Ry.** (Dominion Government).—J. W. PORTER'S title has been changed from acting Chief Engineer to Chief Engineer. Office, Winnipeg.

**Intercolonial Ry.**—M. F. TOMPKINS, heretofore Chief Clerk, Division Freight Agent's Office, Halifax, N.S., has been appointed Division Freight Agent, there, vice A. E. Wilkinson, deceased.

C. L. BURGESS, heretofore clerk to Mechanical Foreman, Gibson, N.B., has been appointed Storekeeper there, vice F. Dunbar.

**Lehigh Valley Rd.**—C. S. LEE, heretofore General Passenger Agent, has been appointed Passenger Traffic Manager. Office, New York, N.Y.

GEO. W. HAY, heretofore General Baggage Agent and District Passenger Agent, South Bethlehem, Pa., has been appointed General Passenger Agent, Office, New York, N.Y.

A. J. SIMMONS, heretofore General Eastern Passenger Agent, New York, has been appointed Assistant General Passenger Agent. Office, 1460 Broadway, New York, N.Y.

P. S. MILLSAUGH, heretofore General Agent Passenger Department, Ithaca, N.Y., has been appointed Assistant General Passenger Agent. Office, 369 Main St., Buffalo, N.Y.

W. B. WHEELER, heretofore General Western Passenger Agent, Buffalo, N.Y., has resigned and has been appointed General Agent, Passenger Department, United Fruit Co., at Havana, Cuba.

**Railways and Canals Department.**—L. K. JONES, I.S.O., heretofore Assistant Deputy Minister and Secretary, has been appointed Assistant Deputy Minister.

J. W. PUGSLEY, heretofore Assistant Secretary, has been appointed Secretary.

**Toronto, Hamilton and Buffalo, Ry.**—The position of Auditor of Freight Accounts and Freight Claim Agent, heretofore held by Thos. Eedson, now deceased, has been divided, and A. S. DUTTON has been appointed Auditor of Freight Accounts, and J.

M. EEDSON has been appointed Freight Claim Agent. Offices, Detroit, Mich.

**White Pass and Yukon Route.**—F. C. ELLIOTT has been elected President, vice O. L. Dickeson, resigned. Office, Chicago, Ill.

H. WHEELER, heretofore Superintendent River Division, White Horse, Yukon, has been appointed General Manager. Office White Horse, Yukon.

A. F. ZIPF has been appointed Traffic Manager, vice J. E. Dempsey. Office, Seattle, Wash.

### Canadian Northern Railway Construction, Betterments, Etc.

**Montreal, Ottawa, Port Arthur Line.**—It was expected to connect up the several sections of this line by Dec. 31, with the exception of two or three steel bridges, which are not completed. The section of the line from North Bay to Capreol is being operated under a temporary order of the Board of Railway Commissioners, which will run to July, by which time it is expected that the ballasting, etc., on the line between Montreal and North Bay will be completed. The remainder of the line from Capreol to Port Arthur is fully completed, and is being partially operated.

The Canadian Northern Ontario Ry. is applying to the Dominion Parliament for the confirmation of an agreement with the Campbellford, Lake Ontario and Western Ry. (C.P.R.) respecting joint terminals at Belleville, Ont., and also respecting joint tracks and terminals at Orillia, Ont.

The Dominion Parliament is being asked to confirm an agreement made between the company and the C.P.R. respecting the use of joint terminals in North Toronto.

**Canadian Northern Ry.**—The ratepayers of Port Arthur, Ont., will vote on Jan. 1, on a bylaw confirming an agreement made between the City Council and the C.N.R., Nov. 14, adjusting certain differences between the parties respecting terminals. The city agrees to convey to the C.N.R. portions of streets and broken fronts of streets near the water's edge, and to release its interest in certain water lots, and to convey to the C.N.R., its interest in the original road allowance along the water's edge from Arthur St. to the north limit of William St., except a small section of the same which is to be conveyed by the C.N.R. to the city, and to aid the company in obtaining the withdrawal of certain registered plans affecting the streets in question. The C.N.R. agrees to hand over to the city a certain piece of land specifically described, subject to the restrictions that other railway than the C. N.R. is to be permitted to run spur tracks over it, and that the property is not to be leased or sold to any competing railway, but it is to be understood that boats belonging to competing railways may use the dock or the property. Pending the reconstruction of the dock a specific means of access is provided for. The company is also to pay the damages to property by the closing of the streets and to convey to the city a right of way to the present government elevator and certain other rights of way.

Contracts are reported let along the route of the Port Arthur and Duluth Ry., and in the Rainy River District for 250,000 ties.

The Dominion Parliament is being asked to confirm an agreement between the C.N.R. and the G. T. Pacific Ry., for the establishment, control and operation of joint terminals at Edmonton, Alta.

**Canadian Northern Pacific Ry.**—It was reported in Vancouver, Dec. 3, that there remained about 105 miles of track to be laid to connect up the various sections of the line between Port Mann and the Albrecht

Summit, which is the section of the line being built under the Vancouver staff's charge. While the staff looked forward to completing the work early in January it is not unlikely that there will be some delay, as at least two cargoes of rails have been detained on account of the war, and a steamship carrying another cargo went ashore in the Magellan Straits.

Work on the bulkhead at the site of the False Creek terminals, Vancouver, is reported to be progressing satisfactorily. About 1,100,000 cu. yds. of material have already been deposited behind the bulkhead, out of the 3,250,000 necessary to fill in the area to be developed.

### Railway Features in the City Planning Problem at Ottawa.

An illustrated address on the city planning problem of Ottawa, with special reference to the railway features, was delivered by C. N. Cauchon, of Ottawa, before the Canadian Society of Civil Engineers, Toronto branch, Dec. 7. The scheme proposed is the abandonment of the present Rideau Canal through Ottawa, diverting it through a new route which would enter the Ottawa River below, and to the east of the city. At the point where it would enter the river, a large industrial area could be developed, which, in conjunction with a deep water harbor in still water, formed by throwing a dike across from the shore to Duck Island, would form the principal portion of the scheme. As it is said that the prevailing winds are from the west, it is claimed that the smoke from this area would blow away from the city. It is proposed to utilize the present canal prism as a traffic thoroughfare through the central part of the city. Connecting with this new area, there is proposed a common line for all the railways, leading into the area from the east, to the row of docks, along the front. All the lines from the east would enter over this line, crossing the Rideau River on a high level bridge, eliminating all the level crossings. This would eliminate many of the railway lines that now cut through the city, the idea being to utilize some of these rights of way as arterial highways. From a central station at the site of the present central station, the line would proceed through a tunnel to the western exit, to the Broad St. station, the various railways all leaving the city over a common line.

### Great Lakes Vessel Classification.

Marine Engineering of Canada, Toronto, says: "We are pleased to be able to state that to Acton Burrows, proprietor and Editor-in-Chief of Canadian Railway and Marine World, is due the credit for having initiated the discussion on Great Lakes vessel classification, which has appeared in the columns of several old country shipping journals, and from which subscribers have had the benefit of the opinions expressed in our last two issues. We have just passed the anniversary date of the great storm which sent so many of our lake craft, with their crews, to destruction and a watery grave, and therefore again brought to the front this classification question."

It may be added that the letter on the above subject from J. M. Smith, ex-Manager of the Collingwood Shipbuilding Co., which was first published in Canadian Railway and Marine World, and subsequently reproduced in a number of other publications in Canada, Great Britain, and the United States, was written in response to a request from Canadian Railway and Marine World's Editor-in-Chief.



# Electric Railway Department

## All Steel Motor and Trailer Cars for London and Port Stanley Railway.

Canadian Railway and Marine World for November published particulars of the electrical equipment for the London and Port Stanley Ry., and, in the December issue, of orders given for 3 electric locomotives and for the electrical equipment for 5 motor cars and 4 trailers. Specifications were prepared subsequently for the bodies for the motor cars and trailers by the Hydro Electric Power Commission of Ontario's engineering staff, acting for the city of London, which owns the line, and tenders were received early in December. While the work of electrification is going on, the line is still being operated by steam by the Pere Marquette Rd., which has it under lease.

The initial car installation will comprise five motor cars and four trailers, both sets identical in structural details, differing only in the motor equipment. They will

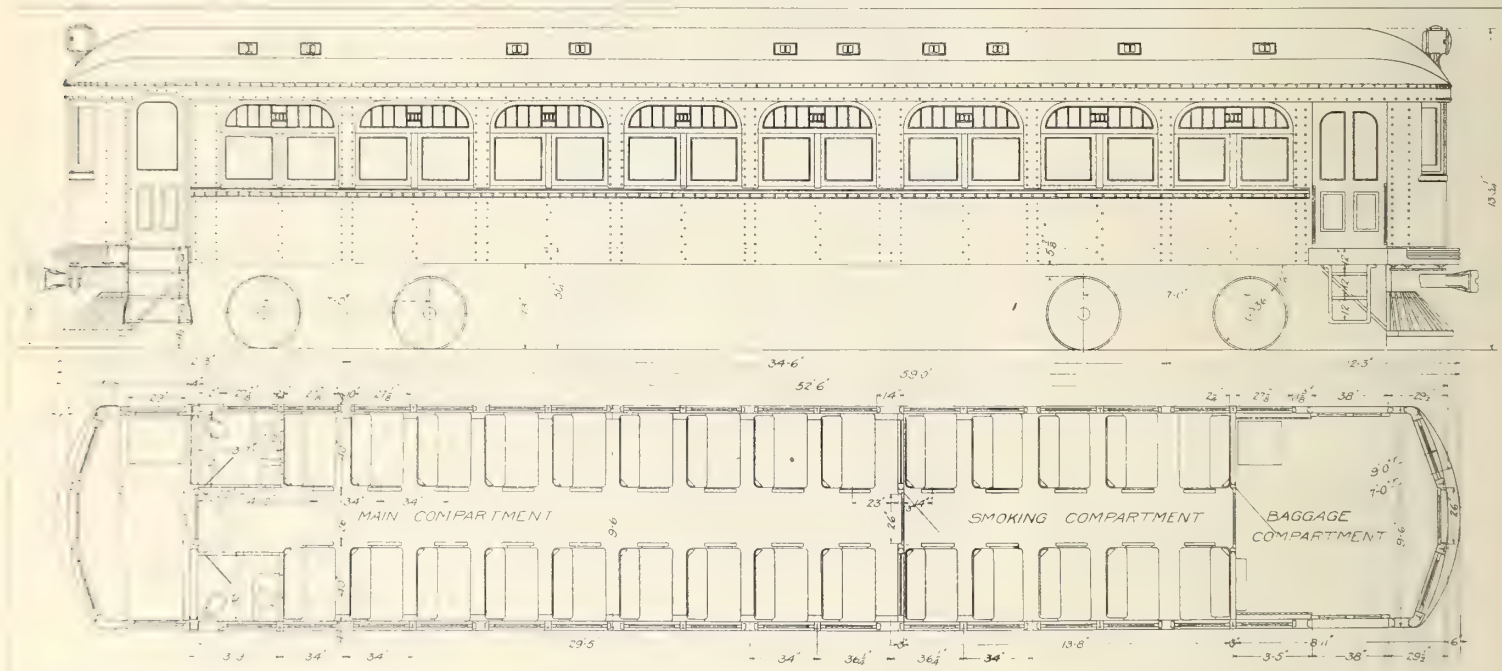
estimated as follows:—

	Motor.	Trailer.
Car body, complete as above...	38,320	38,320
Control equipment .....	9,500	1,856
Air brake equipment .....	2,220	805
Four motors complete at 4,000 lbs. ....	16,000	....
Two 7 ft. wheel base trucks with 36 in. steel wheels .....	26,880	24,080
Total weight in lbs. ....	92,920	65,061

The entire frame of the cars will be of structural steel shapes and plates, with the centre and side sills continuous. The centre sill will consist of two 7 in. 15 lb. I beams at 20 in. centres, with a 3-16 in. cover plate, 24 ins. wide, extending between the diagonal tie plate in each panel. Centrally in each panel there will be a 3-16 in. plate, 9 by 24 ins., on the under side of the centre sill. The side sills will be composite members, with a 6 by 4 by 3-8 in. 12.3 lb. angle as a base. To the

ing to the side angle depth, and will consist of 3-16 in. steel pressings both between the centre sill I beams and between the latter and the side sill angles, flanged to a channel section. At the centre, these will be tied to the centre sill by 3-16 by 12 by 42 in. top plates. Diagonally between these tie plates in each panel there will be two 3 by 3 in. 4.9 lb. angles.

The body end sill will consist of a central 3-16 in. steel pressing between the centre sill I beams, which will extend to the buffer plates, outside of which there are to be two steel castings fitting between the I beams and a 6 in. 10.5 channel 26 ins. from the centre, which will form the end panels diagonal, passing alongside this casting to the end buffer. The top and bottom members of the end sills will be a 4 in. 6.25 lb. channel, the upper one on top of a 1-8 in. plate, 24 ins. wide, the width of the car.



Plan and Elevation of All Steel Motor and Trailer Cars for London and Port Stanley Railway.

be of an all steel construction, of a design approaching that in use for heavy steam railway service, and have been developed as the result of extensive study of existing equipment, profiting by the experience of lines that have had steel equipment in use for years. The general dimensions of the bodies are as follows:—

Length over all .....	59 ft.
Length over end vestibules .....	58 ft.
Length over end of car body .....	48 ft.
Width over all .....	9 ft. 6 ins.
Width over sheathing .....	9 ft. 6 ins.
Width over platform floor, including .....	9 ft. 5 ins.
Height from rail to top of roof, car light .....	13 ft. 5½ ins.
Height from under side of sills to top of roof, car light .....	9 ft. 10¼ ins.
Height from top of rail to top of platform .....	4 ft. 3¾ ins.

The weight of the car body, including heating equipment, seats, light foundations, brake rigging, draught gear, including supports, ready for the installation of the control equipment and air brakes, has been

vertical flange of this angle there will be 1-8 in. steel side plate, 36¾ ins. deep, at the top of which, on the inside, there will be a 1½ by 2 in. 2.77 lb. angle, and on the outside a 3-8 by 3½ in. steel plate, this latter, with the angle and top of the side plate, forming the top section of the side sill girder.

The truck centres will be 34½ ft. The body bolster above the trucks will be 12 ins. deep at the centre, tapering to the depth of the side sill angle at the side. Between the centre sills there will be a 3-16 in. steel pressing, with similar pressings forming the web of the bolster outside the centre sills. Under the centre sills there will be a steel casting for the centre pin connection. A 3-8 by 14 in. steel plate will form the top plate of the body bolster, with a 5-8 by 14 in. steel plate for the bottom plate.

The intermediate space between the bolsters will be divided into six panels by five cross bearers. These cross bearers are to be the same depth as the centre sill, taper-

The buffer will consist of a 7 in. 12.25 lb. channel, bent on a 7 ft. radius, with a cross 6 in. 10.5 lb. channel joining the curved ends. A 1-8 in. plate will cover this end form, being attached to the centre sill I beams and channel braces, the latter carrying the buffer stresses through to the body side sills.

The corner posts will be 4 by 4 by 3-8 in. 9.8 lb. angles. The main side posts will be 3 in. 4 lb. channels, all but the end ones being arranged in pairs at 8½ ins. These pairs are to be placed on each side of the body bolster and cross bearer centres. Intermediate to these, there are to be 2 by 2 by ¼ in. 3.56 lb. tees. Between the pairs of channel side posts at the centre of the car, and at the bolsters, there are to be ¼ in. pressed steel fillers, each side of which will be a diagonal brace, that at the centre of ¼ by 3 in. steel, and at the bolsters of 1 by 4 in. steel. There will be two vestibule posts of 3 in. 4 lb. channels on each side, with four 2½ by 2½ in. 10.5 lb. tees around the end on a 9 ft. radius. The



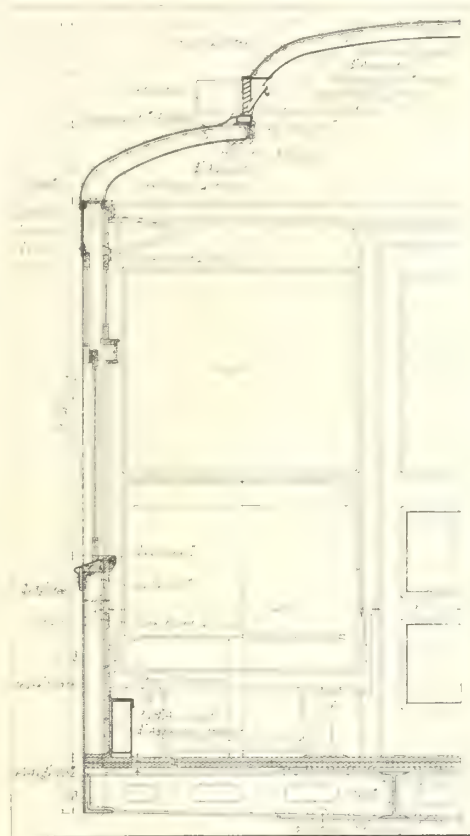
side sheathing of the body will form the main part of the side sill girder, and is to be of 1-8 in. plating, while around the vestibule it is to be of 1-16 in. sheeting.

The top side member will consist of a 3 in. 4 lb. channel, attached to a 1-8 by 8½ in. steel plate, along the inner lower edge of which there is to be a ¾ by 1 in. 1 lb. angle. The roof will be of the compromise deck monitor type, with the deck carlines of no. 14 steel pressing, carried in from the top of the top side channel to a longitudinal 2½ by 2½ in. 5.9 lb. angle, from the top of which the central carline spans of similar pressings to the side carlines will be carried. The roof plating will be of 1-16 in. steel, formed to the carline contour, and carried from the side top plate, which it will overlap, across the car in one stretch. All the roof joints are to be welded to present a smooth surface, with a reinforcing brace under each joint, with additional braces under the pantograph section of the roof. These carlines will be in line with the side posts, with an intermediate one in the side window spaces.

The platform, as mentioned, will be sheathed on the outside with 1-16 in. steel plating. On the inside it will be sheathed with wooden panel frames made of ash, with the windows of mahogany. It will have two drop windows, one either side of the centre, where there will be a 26 in. swinging end door. On each side of the vestibule there will be a 29 in. swinging door. The step openings will have single swing doors, swinging up against the end of the car body. There will be triple steps, of steel construction, the edges of which will be finished with brass stripping.

The inside finish of the cars is to be of the best selected inlaid mahogany, natural sanitary finish, including the doors, linings and mouldings. Rising from the floor to the underside of the window sill, which will be 2 ft. 6 ins. above the floor, there will be a wall of 7/8 in. wood. The body of

of ¼ in. plate glass laid in rubber. These sash will rest on the inner end of the outside sill section, and may be raised into a sash space in the upper part of the car wall. The upper part of the windows, both on the inside and outside of the car, will



Half Section of All Steel Cars for London and Port Stanley Railway.

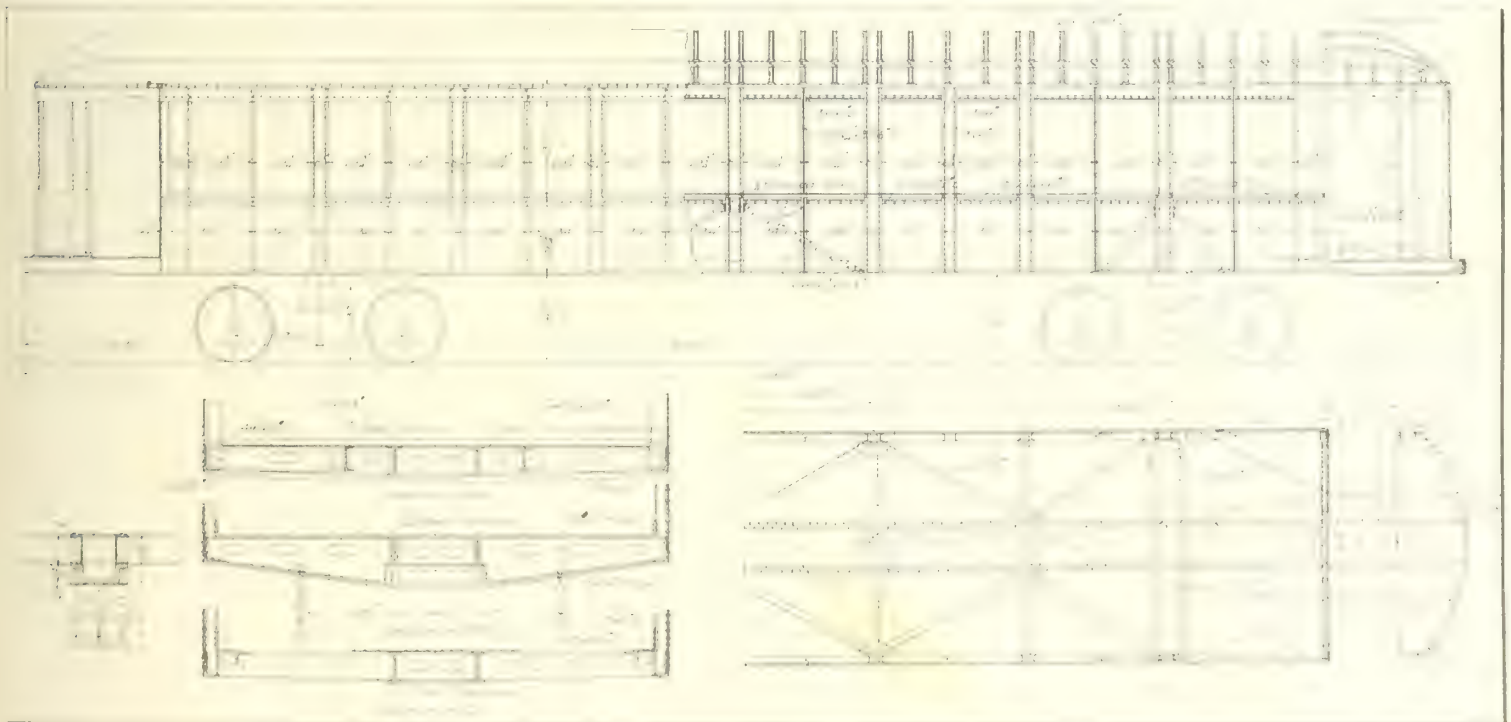
side the agasote line, is to be given a ¼ in. layer of cork paint.

The car trimmings will be of solid bronze, and will include grab handles on the body corner posts and vestibule corner posts, match scratchers between the seats in the smoking compartments, and the hinges, etc. The basket racks will be continuous, to be removable in sections, running the full length of the car, and will be of a bronze finish. The seats will be of a high back design, finished in plush for the main compartments, and in pantasote for the smoking compartments. They will be 40 ins. wide overall, with the seat 19 ins. above the floor, and the back rising to a height of 42 ins. The aisle width will be 26 ins.

The heater is to be of the hot air type, situated at one end of the car, delivering air through a 3 by 8 in. duct of ¼ in. steel along the floor line of the wall. This duct will be insulated from the wall by a ¾ in. asbestos board. The upper face of the duct will have a steel pressing for passenger foot rest. The nature of the heater has not yet been determined, but consideration has been given to one in which electricity is the heating medium, delivering the air through the ducts from a central point, the same as in a coal heater.

Each car will have two lavatories, finished in white, with a sheet steel ceiling metal, giving a tile effect, and will be fully equipped with water closet, washstand, 5 gallon water cooler, and all requisites. The water will be provided from a 50 gallon tank over top of the lavatory, under the roof. Each side of the roof will contain 10 ventilators of the deflector type, automatic in their operation. The lavatories will contain special lavatory room ventilators.

Four of the motor cars are to have the three compartment layout, while the other one, and the four trailer cars, are to have the two compartment layout. In the three compartment layout, the car end is slightly changed so as to incorporate the vestibule



Plan, Elevation and Sections of Steel Frame for All Steel Cars on London and Port Stanley Railway.

the window sill is to be a 1¾ by 2 in. 2.66 lb. angle, while the outside edge of the sill is to be a formed section of thin sheet steel.

The windows are to be in pairs, made of mahogany, and with 22½ by 24 in. windows

be supplied with opalescent cathedral glass, laid in copper. All side windows are to have pantasote curtains.

The headlining will consist of 3-16 in. agasote, secured to the inner flanges of the carlines. The underside of the car roof, in-

into the baggage compartment, 8 ft. 11 ins. long. Adjoining is the smoking compartment, 13 ft. 8 ins. long, with the main compartment 29 ft. 5 ins. long to the other vestibule. The two compartment car has the two vestibules, with the main and smoking



compartments dividing the length into two compartments.

The motor cars will have four 125 h.p. 1,500 volt d.c. motors, with complete electrical control apparatus. There will be two motors on each truck, one to each axle. Power will be brought into the car by either of two pantographs, one at each end of the car.

The lamp fixtures will consist of six clusters of five 40 watt lamps each, in inverted opalescent bowls 17 ins. diam., suspended from a bronze fixture of neat design. This will be the only car lighting. Each car

will have a headlight of requisite strength.

Each car is to be equipped with the G.E. straight and automatic air brake equipment, with signal train line connections, whistles and air gauges. There will also be a steam locomotive type pilot at each end of the car, of iron construction, and arranged to take a snow plough attachment.

We are indebted to F. A. Gaby, Chief Engineer, Hydro Electric Power Commission of Ontario, for permission to secure the foregoing data from J. G. Baukat, Mechanical Engineer, who is responsible for the design of the cars.

## Answers to Questions on Electric Railway Topics.

Following are the questions submitted to the American Electric Railway Association's question box, with replies thereto by Canadian electric railway officials:—

**Wear of Wheels.**—Can anyone give a good explanation as to why the wheels on the gear side of the axle wear much sharper and quicker than on the opposite end of the axle? Is this the prevailing condition on other roads?

D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co., Montreal, sends a supplementary reply to the one given in our last issue, as follows:—We have completed a test on 200 wheels, taken from performance in pairs. The average useful wear, outside of metal lost by turning, shows reduction in circumference of wheels at free end of axle, of 7.14 ins., and at gear end, of 7.08 ins. What little difference there is shows that there was slightly increased wear at free end of axle. This is contrary to past experience, but we have never found the difference to be serious.

**Standing Room in Open Cars.**—Are passengers permitted to stand on the running board and between seats of open cars, or to sit on the front seat directly behind the motorman? Give arguments pro and con.

F. L. Hubbard, Assistant to General Manager, Toronto Ry., Toronto.—It is contrary to law for passengers to stand on the running board of open cars, or on the steps of any car for a longer time than is necessary to enter or leave the car. Passengers are permitted to stand between the seats in the body of the car, or on the rear platform, but are not permitted to stand on the front platform of open cars. In our open cars half of the seats face forward and the other half backward, so that there is space enough between for one row of standing passengers. Male passengers are permitted to sit on the front seat directly behind the motorman, but not women and children. We consider it advantageous not to have passengers standing on the side steps. First, because it makes for safer and more efficient operation, and secondly, because it gives the conductor a better chance to collect the fares. On account of women and children becoming frightened at the blowing out of a hood switch, and also because of the tendency of their presence to distract the attention of the motorman from his duties, we believe it is in the interests of safety first to allow none but male passengers to ride on the front seat of open cars. No standing is allowed on the front platform because it interferes with the motorman.

**Car Cleaning.**—Is car cleaning done under supervision of transportation or mechanical department? What is the average daily cost per car operated for labor and material for car cleaning?

F. L. Hubbard, Assistant to General Manager, Toronto Ry., Toronto.—Car cleaning is done under the supervision of the transportation department, all cars being swept and

dusted every night. A thorough cleaning and washing with a special compound is given the cars during the daytime.

**Notices to Car Crews.**—(a) What is the best method of issuing notices to car men? (b) What is the best way of insuring the reading of them by car men? (c) Is it advisable to issue notices daily? (d) Is it practical to have men sign for notices

### Canadian Electric Railway Association.

**PRESIDENT**—C. B. King, Manager, London Street Railway Co.

**VICE PRESIDENT**—James D. Fraser, Director and Secretary-Treasurer, Ottawa Electric Railway Co.

**SECRETARY-TREASURER**—Acton Burrows, Managing Director, Canadian Railway and Marine World.

**EXECUTIVE COMMITTEE**—The President, Vice President, Secretary-Treasurer and

E. P. Coleman, General Manager, Dominion Power and Transmission Co.

Patrick Dubee, Secretary-Treasurer, Montreal Tramways Co.

A. Eastman, General Manager, Windsor, Essex and Lake Shore Rapid Railway Co.

H. M. Hopper, General Manager and Purchasing Agent, St. John Railway Co.

Wilson Phillips, Superintendent, Winnipeg Electric Railway Co.

C. L. Wilson, Assistant Manager, Toronto and York Radial Railway Co.

**ASSISTANT SECRETARY**—Aubrey Acton Burrows, Business Manager, Canadian Railway and Marine World.

**OFFICIAL ORGAN**—Canadian Railway and Marine World, Toronto.

in a station having 800 men attached to it?

F. L. Hubbard, Assistant to General Manager, Toronto Ry., Toronto.—(a) By issuing short bulletins, dealing briefly with but one subject in each. (b) In the case of important bulletins, we require the men to sign a register, acknowledging having read said bulletins. (c) We do not think it should be necessary to do this, and besides, it would have a tendency to change the method from one intended to emphasize something of a special nature, to that of a common, daily occurrence, and thus create indifference on the part of the men. (d) We do not think it should be necessary for this number of men to sign for every notice issued, but we think it good policy to have all the men sign on special occasions, when it is desired to direct their attention to some particularly important bulletin.

The Great Northern Ry. of Ireland has ordered 5,500 tons of 90 lb. bullhead rails, and 2,500 tons of 85 lbs. flat bottom rails, from the Dominion Iron and Steel Co., Sydney, N.S.

## The Toronto Suburban Railway's Franchise in Toronto.

In response to a request from the City Board of Control, City Solicitor Johnston has given the following opinion:

"The Toronto Suburban Ry. Co., under an agreement with the York Tp., dated Sept. 4, 1899, has the exclusive right to construct, maintain and operate a single and double iron or steel railway on Davenport Road, from the northern limits of the city to the east limit of the Town of Toronto Junction, and in that part of Bathurst St., between Davenport Road and the northerly limits of the City of Toronto. The franchise entitles the company to use its railway for carrying freight, goods, merchandise and passengers. The franchise extends over 30 years and therefore expires on Sept. 4, 1929. Upon the expiration of the 30 years the company is entitled to a renewal for a further term of 20 years upon such terms as may be mutually agreed upon between the township and the company or to be determined by arbitration, and so on at the end of each 20 year period. There is a proviso for the township at the end of any of the periods taking over the railway at a valuation to be determined by agreement or arbitration.

There is a further provision in the agreement that the company "shall grant running rights over the portion of its railway on Bathurst St., from the C.P.R. tracks to Davenport Road, and on Davenport Road, to one other railway company operating a street railway and having ingress to the city, upon such terms as may be mutually agreed upon between the company and the company applying for such running rights, or in case of disagreement to be settled by arbitration under the Municipal Act."

## Edmonton Radial Railway Operating Results.

The following statement of revenue and expenditure for 10 months ended Oct. 31, 1914, has been issued by the City Council:—

Revenue.	
Cash fares .....	\$239,640.10
Ticket sales .....	287,915.50
Advertising .....	4,510.11
Interest on spurs .....	152.87
Special cars .....	789.60
Sprinkling streets .....	3,306.78
Main contract .....	1,233.34
Freight earnings .....	3,585.91
Passes for police and truant officers	1,284.46
Rent of old barns, etc. ....	915.87
Loss on operation of Highlands line paid by Magrath-Holgate Co. ...	258.56
Sale of lost property found on cars	42.85
<b>Total revenue .....</b>	<b>\$543,645.95</b>
<b>Apparent deficit for 10 months ....</b>	<b>190,139.06</b>
	<b>\$733,785.01</b>
Expenditure.	
Maintenance .....	\$ 19,342.67
Equipment .....	44,926.25
Transportation, including power, wages, etc. ....	340,514.73
General, including management, office salaries, damages, etc. ....	38,839.20
Debt interest and redemption	193,344.84
Bank interest .....	11,716.67
Depreciation .....	84,968.80
Miscellaneous .....	131.85
	<b>\$733,785.01</b>
<b>Net revenue account as at Oct. 31, 1914.</b>	
Deficit as at Dec. 31, 1913 .....	\$405,394.07
Apparent deficit for 10 months ending Oct. 31, 1914 .....	190,139.06
	<b>\$595,533.13</b>
<b>Capital account as at Oct. 31, 1914.</b>	
Purchase and construction of land, buildings, track and equipment to Dec. 31, 1913 .....	\$2,841,948.48
Additions during the year .....	217,694.54
	<b>\$3,059,643.00</b>



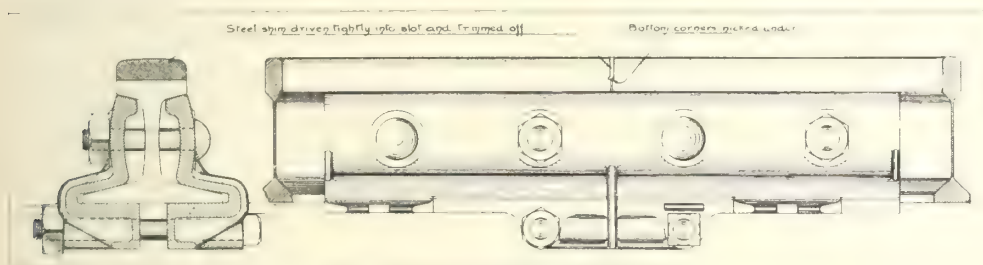
## An Invisible Rail Joint on the London Street Railway.

A very simple and apparently a very effective device in connection with track joints in paved streets was tried during the past summer by C. B. King, Manager, London St. Ry., London, Ont. The track in which the experiment was made consisted of 80 lb. A.S.C.E. rail, on standard cedar ties, with concrete foundation 6 ins. beneath the ties and up to the top of the tie. When the brick pavement was being laid, instead of using a sand cushion, a mixture of 1 to 8 cement mortar was spread just ahead of the paving, the brick being carefully laid and levelled on top of the soft mortar. Before the mortar became dry, cement grout, in the proportion of 3 to 1 was run in over the bricks, thoroughly filling the joints between them. In forming such a bond with the mortar underneath, the brick pavement, together with the concrete foundation becomes so nearly monolithic that even should the rail be inclined to work loose there is no sand cushion or other soft substance to be washed out, allowing the rail to drop. Molded scoria blocks were laid in alternate courses inside the rail, thus forming the flangeway.

When the track had been concreted but just before the paving was being laid, the opening between the rails at each joint was

tically ran them together, this gradual loosening of the joint plates would not take place. It is therefore believed that where this shim is inserted so that no pounding whatever can take place at the joint, the plates will remain tight and the joint be practically a perfect one. Joint shims inserted in this manner during the ordinary summer weather of June and August, have shown no signs of loosening, due to shrinkage by sufficient cold weather to freeze the ground below the bottom of the rail. It is therefore believed that the joint plates are holding so tightly that the stresses caused by temperature shrinkage are equally distributed throughout the whole rail.

Another experiment was tried recently by putting these shims in the joints of another piece of track laid with the same kind of rail, but in an unpaved street where the gravel is kept close to the top of the rail. This track was laid about two years ago, but the joints were showing very slight signs of working loose back from the ends of the rail as previously mentioned. The shims were put in between the ends of the rail as described and as they soon rolled together so that they became nearly invisible, it is believed that they will continue to hold the joint solid. It was found, when



Invisible Rail Joint, London Street Railway.

widened by sawing out the slot, using two or three hack saw blades placed side by side in a special frame. The width of the slot should be about  $\frac{1}{8}$  in. greater than the space between the rails, so as to provide shoulders for the shims and should extend to a depth a little below the centre of the head. This opening was then filled with a piece of fairly hard sheet steel which was carefully driven into the slot and then filed off level with the top of the rail. Before inserting the steel shim the bottom corners of the slot were slightly nicked under, then when the steel shim had been driven to place, the corresponding corners of the shims were bent into these nicks, thus removing all possibility of the shim getting out. When the car service is put on to a track where the joints have been treated in this manner, the slight cold rolling effect of the wheels on the top of the rail still further tightens the shims, so that in a very short time it is almost impossible to find them, hence the reason for the novel title of an "invisible" joint.

It is almost needless to add that whatever joint is used, whether it be a continuous joint, Atlas joint or ordinary angle bars, it must be perfectly tight, or such a shim inserted between two rails cannot possibly remain tight. It had been found, however, that even if the joint remained tight and there was even the smallest opening between the two rails, the small pound produced by even such a small opening would start a loosening process, which would gradually spread back from the end of the rail and finally loosen the whole joint. It was noticed that where rails butted very tightly together, so that the cold rolling effect prac-

putting the shims in where the track is in constant use, that the shim had to be driven in, and the projecting part cut off with a cold chisel, not over  $\frac{1}{8}$  in. above the rail, before a car was allowed to run over it; otherwise the projecting part of the shim was mashed out over the ends of the rail, badly denting them. Then the mashed out top would break off, leaving a worse depression than ever. By using this care and allowing only  $\frac{1}{8}$  in. projection to be mashed down by the car wheel, the shim is only tightened the more and then, when filed off even, soon becomes invisible, which definitely proves that everything about the joint is solid.

As the joint is undoubtedly the weakest spot in track work, this is certainly a very simple method of helping to hold them tight and since after several months use, including wintry weather, they continue to show up favorably, it is believed the desired effect will continue.

## Acceptance of United States Coins in Canada.

The General Manager of a Canadian electric railway company writes as follows: "While reading over the Canadian Railway and Marine World for December, I noted the paragraph stating that the Montreal Tramways Co. was not refusing to accept U. S. coins for fares on its cars, and shortly afterwards I came across a paragraph in the Electric Railway Journal in connection with the use of Canadian coins in the U. S. It is interesting to note the difference in point of view. The item in the Journal is as follows:

"Tricky Patrons.—A letter was addressed to the editor of the Topeka Capital recently in which the writer expressed the opinion that it would be interesting to know how many people are 'victimized' a week by the Topeka Ry. paying out in change Canadian dimes in place of American dimes. To the letter as published in the Capital the editor appended this note in the usual parentheses: 'Patrons should examine their change. We do not imagine the street railway company imports Canadian money. If it pays such coins out they are coins that tricky patrons have already passed to the Company.'"

## Fares on Lethbridge Municipal Railway.

Commissioner A. Reid presented the following report to the City Council at the middle of November:

"From Jan. 1 to Oct. 31, 1914, the number of street railway fares paid by regular tickets (6 for 25c) was 396,737; number paid by limited tickets (8 for 25c) was 144,194, or nearly 31% of that paid by regular tickets; number paid by cash was 289,907, or 73% of that paid by regular tickets; number of fares paid by limited tickets was about 26% of that paid by cash and regular tickets; returns from children's tickets amount to \$786.39; from limited tickets, \$4,506.08; from regular tickets, \$16,530.70, and from cash fares, \$14,495.34.

"If the number of passengers carried remained the same up to Oct. 31, 1914, and we had charged 5c instead of giving 6 tickets for 25c the revenue would have been increased \$3,300, and if 6 tickets for 25c had been given instead of 8 for 25c the revenue would have been increased \$1,500, making a total of \$4,800.

"After a careful study of above, and considering the small percentage of passengers using limited tickets, I would recommend the following changes, to go into effect on Dec. 1: That the use of the present limited tickets be discontinued, and the regular tickets (6 for 25c) be substituted; these tickets to be good for the following hours: 6 to 8 a.m., 12 noon to 2 p.m., and 5 to 7 p.m. The regular fare to be 5c, and 10c after midnight. Children's tickets (10 for 25c) to be continued. Two children to travel on one 5c fare, but not on one ticket. If children's tickets are used, each child must have a ticket, and the age to be limited to 5 to 14 years. Children under 5 to travel free.

"The present employees' tickets to be discontinued and books of blue tickets substituted (25 for \$1). The carrying of policemen and firemen free to be discontinued, and these departments to purchase blue tickets as required."

The International Ry.'s New Freight Service inaugurated recently between Buffalo and Rochester, N.Y., has been such a decided success that the company contemplates the building of another freight terminal in Buffalo in the very near future. The present terminal, which has been in use only about three months and is located a little north of the heart of the city, has begun to outgrow itself, and in order to facilitate matters for the shippers the company is thinking of building the new terminal in the storage and commission house district, which is south of the heart of the city. With these two terminals the company hopes to be able to handle express freight more efficiently. This, of course, will mean a saving for shippers in cartage.

The question of the appointment of a commission to manage the Edmonton Railway Ry. was one of the issues raised in the December municipal campaign in Edmonton, Alberta.



## Electric Railway Projects, Construction, Betterments, Etc.

**Brandon Municipal Ry.**—During 1914 the city Council has changed 0.734 of a mile of 60 lb. A.S.C.E. rail, on gravel ballast, to 70-lb section steel, with a concrete roadbed. F. Boden, Brandon, Man., is Superintendent. (Dec., 1913, pg. 392.)

**Brantford Municipal Railway-Grand Valley Railway.**—The rotary converter referred to in our last issue is being installed in the Hydro Electric sub station at Paris, Ont., and not at Brantford, as mentioned previously. It was purchased second hand in Phillipsburg, Pa.

The trestle bridge across Blue Lake, on the Grand Valley Ry., which is being considerably strengthened, is 365 ft. long and 22 ft. 8 in. at the centre span, which is one of 53 ft. The other spans vary, according to the nature of the slope of the banks and the soil, from 13 to 26 ft. The structure rests on piles and concrete blocks, 20½ ft. by 1 ft. 5 in. The reconstruction was rendered necessary owing to the expectation of increased traffic since the line passed under public ownership. (Dec., 1914, pg. 553.)

**Hamilton St. Ry.**—The Board of Railway Commissioners has authorized the company to build a subway under the G.T.R. tracks at Kenilworth Ave., Hamilton, Ont., with a headway of 14 ft. The city is to cut the street to a 3% gradient, and the G.T.R. is to pay the cost of widening the subway to carry any greater number than four sets of tracks. The cost of the subway is to be paid as follows: 35% by the H.S. Ry.; 25% by the City Council; 32½% by the G.T.R.; 7½% by Barton Tp., and 25%, not to exceed \$5,000, from the Dominion grade reduction fund. (Sept., 1914, pg. 431.)

**London St. Ry.**—During 1914 the company laid new curves and second track at various points in London, Ont., totalling 1,096 ft. (Oct., 1914, pg. 476.)

**Montreal and Southern Counties Ry.**—The Dominion Parliament is being asked for an extension of time for building this railway from Montreal, via St. Lambert, to Granby and other points south of the St. Lawrence River. The line is being operated from Montreal to St. Césaire, Que., 35 miles, and construction is in progress between St. Césaire and Granby, 15 miles.

**Ottawa and St. Lawrence Electric Ry.**—The Ontario Legislature is being asked to extend the time for the building of the proposed railway from Ottawa to Morrisburg and along the St. Lawrence River to Brockville, then to Braeside, on the Ottawa River, and along the Ottawa River to Ottawa; and for power to build a line westerly from Brockville to Rockport; to build a branch line, or deviate the main line so as to serve Smiths Falls; and to extend the line from the village of Russell to Embreum, and northerly to South Indian. The company is also asking for a change of name, and for authority to use "steam or other motive power," instead of electricity, as in the original charter. (Dec., 1914, pg. 553.)

**Port Arthur Electric Ry.**—The Port Arthur, Ont., City Council has directed a report to be made upon a proposal to build a car line in Mariday Park. (Sept., 1914, pg. 431.)

**Saskatoon Municipal Ry.**—The Saskatoon City Council is constructing a bridge at Twenty-fifth St., at a cost of \$400,000, towards which the Provincial Government is contributing two-thirds. Work was begun Sept. 2, and is reported to be well advanced. The bridge is of concrete, 65 ft. wide, and 1,490 ft. long. There are eight spans, of which four are of 150 ft. each. Provision is made for foot passen-

gers by a cantilever on either side of the bridge. A double track is to be laid on the bridge for the municipal railway. One of the main reasons for building the bridge is the largely increased traffic due to the railway. (July, 1914, pg. 336.)

**Toronto Civic Ry.**—The City Council has under construction a double track line from Dundas St. to Quebec Ave., on Bloor St. W., 0.745 mile. A temporary track has been laid, but the permanent work will not be done until next spring.

The question of the building of a line on Lansdowne Ave., and a line to North Toronto, are to be voted on by the ratepayers, Jan. 1.

The City Council has authorized the erection of a temporary car barn on Dorval Road for the new Bloor St. line. (Dec., 1914, pg. 553.)

**Tramways, Limited.**—An agreement has been made between the company and the Edmonton, Alberta, City Council, under which the company may connect up its projected lines at certain points, and setting out the routes to be followed within the city, by the lines making such connection. The company is to ask the city to build the connecting lines when it is ready to have the connection made, and if the city decides not to build them, or any of them, the company may do so. When the city desires to pave any of the streets on which these connecting lines run, it shall take over any lines that the company has built. The city shall have power to operate its cars over any of the connecting lines on a mileage basis, the principle upon which this is to be calculated being set out. The company is to use any other motive power than steam, but within the city such power must conform to the city bylaws. The company's cars within the city are to be moved by the city, at the company's own expense. The rental to be paid by the company is to be fixed on a car mile basis for passenger cars, and a per car basis for freight and express cars. Statements are to be made monthly. Twenty miles of lines are to be built by Dec. 1, and the agreement is to run for 30 years. All differences are to be settled by arbitration. The bylaw was voted on by the ratepayers at the municipal elections, Dec. 14, 1914.

**Winnipeg Electric Ry.**—We are officially advised that the line from Stony Mountain to Stonewall, Man., 7.50 miles, built by the subsidiary Winnipeg, Selkirk and Lake Winnipeg Ry., was officially opened Dec. 12, 1914, and that a regular car service was put in operation Dec. 14. There was a public celebration in connection with the opening of the extension. (Dec., 1914, pg. 554.)

**Bloor St. Viaduct, Toronto.**—The contract for the erection of a viaduct across the Don River Valley at Bloor St. has been let by the Toronto City Council to Quinlan and Robertson, Montreal, who have ordered the structural steel work from the Hamilton Bridge Co. The viaduct will be 1,539 ft. long and 86 ft. wide. The plans provide for the laying of a double track for an electric railway to be built by the city council, and provision is made for the addition at a subsequent date of a second deck to be utilized in connection with the working out of the rapid transit and radial electric railway problems.

The Toronto civic railway has ordered 3 single truck cars for its Bloor St. west line, from the Preston Car and Coach Co., and a snow plough of U. S. manufacture from the C. E. A. Carr Co.

## Electric Railway Finance, Meetings, Etc.

**British Columbia Electric Ry.**—A London, Eng., cable, Dec. 12, says:—"The B.C. E. Ry. records depressing conditions in that province, all new work having been postponed and also a big reduction in the population noted. Stockholders are told they must be prepared for a drastic reduction in future dividends owing to the war."

**British Columbia Electric Ry. and Allied Companies.**—Gross earnings for October, \$661,000; operating expenses, maintenance, etc., \$511,877; net earnings, \$149,123, against \$743,501 gross earnings, \$561,902 operating expenses, maintenance, etc., \$191,599 net earnings for October, 1913. Aggregate gross earnings for four months ended Oct. 31, \$2,676,351; net earnings, \$615,670, against \$3,014,355 aggregate gross earnings, \$775,077 net earnings for the same period 1913.

**Calgary Municipal Ry.**—The Calgary, Alberta, City Council is considering the question of the deficit in the operation of the municipal railway. In the course of a recent discussion it was stated that there was a deficit of about \$50 a day on the line to the C.P.R. Ogden shops, including all fixed and overhead charges, maintenance, depreciation, etc. Commissioner Graves stated that nothing could be done to reduce the deficit on this line. In regard to the other routes, traffic was being checked, and alterations were being made in the schedules as appeared necessary, in order to effect savings in operating expenses.

**Cape Breton Electric Co.**—Gross earnings for October, \$30,751.49; operating expenses, taxes, etc., \$18,524.03; net earnings, \$12,227.46; interest charges, \$5,239.41; balance, \$6,988.05; bond sinking and improvement funds, \$1,273.34; balance for reserves depreciation, etc., \$5,714.71, against \$36,793.71 gross earnings, \$18,751.52 operating expenses, taxes, etc., \$18,042.19 net earnings, \$4,891.67 interest charges, \$13,150.52 balance, \$1,190 bond sinking and improvement funds, \$11,950.62 balance for reserves depreciation, etc., for October, 1913. Aggregate gross earnings for 10 months ended Oct. 31, \$291,466.40; net earnings, \$117,806.70; interest charges, bond sinking, and improvement funds, \$64,939.15; net balance, \$54,229.53, against \$308,522.13 aggregate gross earnings, \$133,449.75 net earnings, \$60,897.82 interest charges, bond sinking, and improvement funds, \$72,551.83 net balance for reserves depreciation, etc., for same period 1913.

**The Dominion Power and Transmission Co., Hamilton, Ont.,** has declared the regular half yearly dividend of 3½% on the preferred stock, payable Jan. 15.

**The Guelph Radial Ry.** during 1914 paid the City of Guelph, Ont., \$1,742 taxes and a dividend of \$8,350, being 5% on \$169,000 of stock held by the city. About \$3,200 was paid on capital account out of earnings and about \$2,800 in track replacements, which are not really chargeable to capital.

**Lacombe and Blindman Valley Electric Ry.**—W. L. McKinnon & Co., Toronto, advise that they have sold the \$206,700 of this company's first mortgage bonds. (Dec., pg. 553.)

**London St. Ry.**—Gross earnings for October, \$30,722.19; expenses, \$22,718.63; net earnings, \$8,003.56; deductions, \$2,760.55; net income, \$5,243.01. Aggregate gross earnings for ten months ended Oct. 31, \$312,914.65; expenses, \$222,752.47; net earnings, \$90,192.18.

Gross earnings for November, \$26,347.73; expenses, \$18,692.06; net earnings, \$7,655.67, against \$29,057.59 gross earnings, \$21,089.50 expenses, \$7,968.09 net earnings, for November, 1913.

The company's franchise has 10 years to



run, but an intimation is said to have been conveyed recently to the London, Ont., City Council, that the company is willing to sell out, and that city debentures might be accepted in payment. The matter came before the City Council incidentally, Dec. 7, when F. A. Gaby, Chief Engineer, Hydro-Electric Power Commission of Ontario, was asked to make a report upon the value of the company's property. Nothing definite will be before the Council until the company's proposition and the report are received.

**Regina Municipal Ry.**—A report presented to the City Council for the ten months ended Oct. 31, 1914, gives the following figures relating to the operations of the municipal railway:—Deficit on operation, \$4,566.65; add capital charges, \$74,765.24; total, \$79,331.89.

**Sherbrooke Ry. and Power Co.**—Aggregate gross earnings for four months ended Oct. 31, \$51,561.42; operating expenses, \$30,011.36; net earnings, \$21,550.06, against \$50,001.63 aggregate gross earnings; \$29,794.16 operating expenses; \$20,207.47 net earnings for same period 1913.

**The Toronto Railway** has sold in New York \$1,500,000 in 6% notes, \$750,000 due on December 1, 1915, and the balance on December 1, 1916, the former being disposed of at 104¼ and the latter at par.

## Electric Railway Notes.

The Calgary Municipal Ry. has put a new schedule in operation for the winter.

The Toronto Suburban Ry. has bought a snow sweeper, of U.S. manufacture, through the C. E. A. Carr Co., Toronto.

The Brantford Municipal Ry. has dismissed three conductors, charged with stealing fares.

The last annual report showed cash on hand and in bank of \$532,140, but the company had a \$600,000 outstanding debenture issue redeemable this year.

Receipts for November, \$465,035.02 against \$501,254 for Nov., 1913. The percentage paid to the city was \$46,503.50 against \$51,533.15 for Nov., 1913. The aggregate gross receipts for 11 months ended Nov. 30 were \$5,537,058, against \$5,502,555 for the same period 1913.

**Toronto Ry., Toronto and York Radial Ry. and Allied Companies.**—Gross earnings for October, \$849,636; operating expenses, maintenance, etc., \$426,536; net earnings, \$423,100, against \$861,235 gross earnings; \$415,021 operating expenses, maintenance, etc., \$446,214 net earnings for October, 1913. Aggregate gross earnings for 10 months ended Oct. 31, \$8,471,743; net earnings, \$4,137,753, against \$8,044,705 aggregate gross earnings, \$3,999,218 net earnings for same period 1913.

**Winnipeg Electric Ry.**—Gross earnings for October, \$330,562; operating expenses, \$197,465; net earnings, \$133,097, against \$357,313 gross earnings, \$196,703 operating expenses, \$160,610 net earnings for October, 1913. Aggregate gross earnings for 10 months ended Oct. 31, \$3,402,502; net earnings, \$1,423,407, against \$3,338,748 aggregate gross earnings, \$1,496,985 net earnings for same period 1913.

and that an effort be made to realize on what is now carried in the accounts as "dead stock," estimated to be worth \$17,000.

The Calgary, Alberta, City Council has directed that all persons over 14 years of age who are classed as scholars, must carry with them identification cards, signed by the superintendent of schools, to enable

Preston Car and Coach Co., has been supplied by the Canadian Westinghouse Co. It consists of 5 double equipments, single end, 101-B-2 railway motors, including one K-10 controller, and one complete equipment, double end, double equipment, 101-B-2, including two K-10 controllers.

The Mannheim Insurance Co. has been nonsuited in an action against the Sandwich, Windsor, and Amherstburg Ry., in a claim for damage arising out of a collision between a street car and an automobile insured with the company, on the ground that the company is organized in Germany by German capitalists, alien enemies of the British Empire, and had no standing in British courts.

The British Columbia Electric Ry. has rerouted the cars on a number of its lines in Vancouver, to allow of more economical operation, while still meeting traffic conditions. The employees have adopted an arrangement amongst themselves whereby certain of them lay off each week, thus enabling a larger number of men to be kept employed than would otherwise be the case during the present slackness.

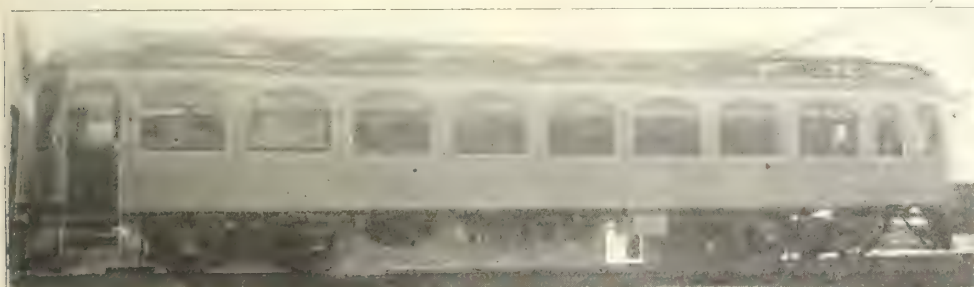
An application was before the Ontario Railway and Municipal Board, Dec. 10, to compel the Toronto and York Radial Ry. to provide a passenger shelter station at Sunnyside, where the Mimico line passengers transfer to the city lines. The company stated that it had no objection to providing an efficient shelter, but pointed out that construction difficulties prevented its erection until the spring. In the meantime a large heated and lighted car has been provided as a substitute.

The County Court Judge at Ottawa, Dec. 3, gave judgment for \$94 against the Ottawa Electric Ry. for damages sustained by a motor car belonging to the Major Hill Taxi Co. The motor car, in order to pass a standing car, moved out on to the street car tracks, the driver signalling an approaching electric car what he was going to do. The street car failed to stop, and the motor car was damaged. The jury which heard the action found the O.E. Ry. Co.'s motor-man to blame.

The Ontario committee of the Trades Congress has petitioned the Ontario Legislature for legislation establishing a 9 hour day for street railway employees, to be worked within 12 consecutive hours, that vestibules of street cars be heated in the winter. That new employees on street railways be given 30 days training before being allowed to take charge of a car, and that private detective agencies in the Province be abolished, it being alleged that they are a "menace to the lives and liberties of Canadian workmen."

The Imperial Privy Council has reserved its judgment in the appeal of the Toronto Suburban Ry. against a judgment of the Supreme Court of Canada on an order of the Ontario Railway and Municipal Board, relative to the paving and upkeep of the roadway used for railway purposes and 18 ins. on each side, on Upper Bathurst St. and Davenport Road. In the Supreme Court it was held that the Board had jurisdiction to make an order to pave, but could not delegate the power to determine the character of pavement to its engineer, but must itself direct what material should be used in paving.

The London St. Ry. has received 4 single end, single truck, p.a.y.e. cars mounted on 21-E trucks with 8 ft. wheel base, from the Preston Car and Coach Co. They are respectively duplicates of the 6 cars which the company received from the same source in 1913 and which were described and illustrated in Canadian Railway and Marine



Suburban Car for Niagara, St. Catharines and Toronto Ry.

The Toronto Board of Control has decided to permit advertising in the civil railway cars.

The Manitoba Public Utilities Commission is conducting an investigation into the street car service given by the Winnipeg Electric Ry. R. R. Knox, the company's Traffic Superintendent, gave evidence at the sittings held Dec. 12 and 14.

The Quebec City Council requested the Quebec Ry., Light, Heat, and Power Co. recently to issue transfers from certain of its city cars to cars operated over its Sillery line, within the city limits. The company has replied that the Sillery line is owned by a separate company.

The Saskatoon, Sask., City Council has made arrangements with the local branch of the St. John's Ambulance Association for a course of instruction in first aid work to be given to the employees of the municipal railway. The classes are being held twice a week.

The Port Arthur, Ont., City Council finance committee has recommended that the present electric railway charges be closely examined with a view to their reduction,

them to take advantage of the reduced fare for scholars on the municipal railway.

The Mayor of Saskatoon, Sask., expressed the opinion at a Council meeting recently, during a discussion on a proposition to issue tickets at six and eight for 25 cents, that the increase of fares on the municipal railway had been a failure. The Council decided to have a special report on the matter.

The Brandon Municipal Railway has reduced its car hours from 18 to 17 hours a day. Motormen have been paid 8½ hours each, not allowing for reporting time, which is 10 minutes, and they have sent in a request to the city council to be paid for reporting and they also ask 9 hours' pay.

The Port Arthur, Ont., City Council, on Dec. 1 ratified a new agreement with its street railway and other employees, under which there is a certain reduction of pay, dating from Nov. 15, thus bringing the employees of the corporation's electric department into line with those of other departments.

The electrical equipment for the six single truck cars which the Brantford Municipal Ry. ordered recently from the



World for Dec., 1913, and Jan., 1914. Some slight changes were made in the interior seating, by having longitudinal seats on one side and cross seats on the other, and instead of having hand pole straps, as is usual in longitudinal seat cars, there is a hand pole hung on brackets, 5½ ft. from the floor, and 5 ins. back from the face of the cushion.

The Niagara, St. Catharines and Toronto Ry. has received four 55 ft. suburban cars, from the Preston Car and Coach Co. They are divided into two compartments, the smoker at one end being separated by a partition which allows a passage way on one side of the car, enabling passengers to go into the other compartment without having to pass through the smoker. The seats are upholstered in green plush, the backs being especially high with head roll. The trimmings throughout are statuary bronze. The cars are finished in polished quartered oak inlaid with white holly, agastoe headlinings and empire decks. The framing is entirely of steel covered with wood. The cars are painted steel grey with black and gold lettering, and are geared to run at 60 miles an hour. The wheels are steel tired with cast iron centres, M.C.B. journals, Keystone sign boxes and Tomlinson radial automatic couplers. The electrical equipment consists of 4 G.E. 214 motors with type M.K. simplified control, the master controller having dead man release handle. The cars are equipped with straight air and Westinghouse automatic brakes.

### Mainly About Electric Railway People.

A. GABOURY, Superintendent, Montreal Tramways Co., read a paper on the safety first movement before the Montreal Electrical Society, Dec. 7.

W. F. GRAVES, Chief Engineer, Montreal Tramways Co., is one of a committee of three to make a valuation of the Detroit United Ry's. Co.'s track property for the Michigan Railroad Commission.

D. S. MARTIN, who died from wounds received in the fighting at Messines, France, was an electric engineer, and at one time was on the British Columbia Electric Ry.'s engineering staff.

A. W. WESTMAN, Superintendent, Windsor, Essex and Lake Shore Rapid Ry., was electrocuted at the car barns at Kingsville, Ont., Dec. 21, while preparing to put a snow plough at work. He leaves a wife and 6 children.

ADOLPHE ALFRED DION, General Superintendent of the Ottawa Gas Co., who has been elected a director of Ottawa Electric and also of Ottawa Gas, is a well known sportsman and for many years has been vice commodore of the Ottawa Canoe Club. He is President of the Moose Jaw Electric Ry.

SIR ADAM BECK, Chairman, Hydro Electric Power Commission of Ontario, has been appointed Chief Remount Commissioner for Eastern Canada, with the title of Colonel and attached to the headquarters staff. Sir Adam has been in charge of the purchasing of remounts for the British Army, in Ontario, since the outbreak of war.

PATRICK DUBEE, Secretary-Treasurer, Montreal Tramways Co., and a member of the Canadian Electric Railway Association's executive committee, has been appointed on three of the American Electric Railway Association's committees, viz., on taxation matters, on relations with other associations, and on transportation for the next annual convention at San Francisco.

T. E. MITTEN, who has been elected President of the Philadelphia Rapid Transit Co., Philadelphia, Pa., was from 1901 to 1905 General Superintendent of the Inter-

national Ry., Buffalo, N. Y. In 1905 he was appointed President of the Chicago City Ry. Co. and also Vice President of the International Ry., Buffalo. His association with the Philadelphia properties began early in 1911.

F. S. BARNARD, who has been appointed Lieutenant-Governor of British Columbia, was born at Toronto, May 16, 1856, and has been associated with the British Columbia Electric Ry., for many years, acting latterly as local adviser to the directors, all of whom are located in London, Eng. He is a son of the late F. J. Barnard, who established an express company in British Columbia some years ago, which was originally known as Barnard's Express, and which later developed into the British Columbia Express Co., of which he was Manager from 1880 to 1888.

### Electric Railway Track Laid in 1914.

Below is a preliminary table showing track laid on electric railways in Canada during 1914. It is not published as a complete one, owing to the fact that some of the companies have not replied to the circular sent, but it is believed to be approximately correct. The \* mark indicates that the figures given are estimated.

	Miles.	Miles.
* British Columbia Electric Ry.		
Various extensions .....		5.00
* Fort William Electric Ry.		
Extensions .....		2.00
Hamilton St. Ry.		
Extensions, Kenilworth Ave., etc. ....		2.30
* Montreal Tramways Co.		
Various extensions .....		5.00
Moose Jaw Electric Ry.		
Boulevard Heights extension .....	1.00	
Extension on Hall St. ....	1.00	
		2.00
* Port Arthur Electric Ry.		
Extensions .....		2.00
* St. John Ry.		
Kanes Corner extension ...		1.50
Saskatoon Municipal Ry.		
Extension on Ave 26 .....		0.50
Suburban Rapid Transit Co.		
Extensions near Winnipeg ..		1.37
Winnipeg Electric Ry.		
Various extensions .....		7.56
Winnipeg, Selkirk and Lake Winnipeg Ry.		
Stony Mountain to Stonewall. ....		7.50
Total .....		36.73

The Montreal and Southern Counties Ry. put in operation during 1914 nine miles of track between Marieville and St. Césaire. This mileage was taken over from the Central Vermont Ry., the M. & S.C. Ry. rebalancing the track, bonding the rails, and putting up the catenary overhead construction.

### Telegraph, Telephone and Cable Matters.

James Bayliss, Chief Engineer, Bell Telephone Co., died, Dec. 7, at Montreal, aged 45.

F. C. Robertson, Inspector, C. P. R. Telegraphs, Toronto, died at Port Hope, Ont., Nov. 29. He entered C. P. R. Telegraph service in 1886 as chief operator at Toronto, prior to which he had been with the Western Union and Baltimore and Ohio Telegraph Companies, at various points in the U. S.

The Marconi Wireless Telegraph Co. has obtained an injunction, in a U. S. District Court, restraining the DeForest Wireless Telegraph and Telephone Co., the Standard Oil Co., and Lee DeForest, from continuing to install a wireless device on Standard Oil Co.'s vessels, which is alleged to be an infringement of patents held by the Marconi company.

The present war is responsible for the creation of many precedents in the conducting of warfare, and although war on the cables cannot be included in these, there is,

to a certain extent, a precedent, as in no previous war has the inconvenience been so general, nor has it interfered so much with neutral countries, as now. The recent raids on isolated British stations, and the Pacific cable at isolated points, caused considerable damage, and some inconvenience, but all has now been repaired, but it is reported that Germany is practically isolated so far as cable communication is concerned, any communication with that country having to be carried on over certain British cables and land lines of neutral countries or of the allies. Where German cables have been severed, no attempt is being made to effect repairs, for the simple reason that it is impossible to do so. One of the latest cables to be cut is that of the German Atlantic Cable Co., Cologne, which is carried via Azores and Emden.

### Among the Express Companies.

The Canadian Ex. Co. has placed its service in effect over the portion of the Grand Trunk Pacific Ry., recently opened between Hazelton and Prince Rupert, B. C., and has opened offices at Terrace and Prince Rupert.

### Changes in Express Merchandise Receipt.

The Board of Railway Commissioners passed order 22973, Dec. 7, 1914, directing that in lieu of notice contained in the Express Merchandise Receipt reading, "Liability limited to \$50 unless higher value is declared by shipper and inserted herein," the following be substituted,—"Liability limited to \$50, unless higher value is declared by shipper and inserted herein, in which case an extra charge is made depending upon value declared. No extra charge if value is below \$50."

In lieu of the present sec. 4 of Terms and Conditions of Merchandise Receipt, the following be substituted,—"Money, specie, completely signed and executed bonds, coupons, bank notes and negotiable paper, or incompletely executed legal tender and bank notes, jewellery and precious stones shall not be packed or included with shipments of ordinary freight, and if so packed, company shall not be liable for loss of, or damage to, such goods.

Effect shall be given to the foregoing not later than July 1, 1915.

Express companies are to add the following notice to the face of Merchandise Receipt,—"The Post Office Act gives the Postmaster General exclusive right of conveyance of letters within Canada. This includes circulars, etc., enclosed in envelopes, sealed or ready to be sealed at point of destination. Heavy penalties are imposed for violation of the act. The company does not accept for transportation packages containing such letters or circulars."

**Vancouver Elevator.**—A press dispatch from Ottawa, Dec. 2, stated that the contract for the erection of the Dominion Government terminal elevator at Vancouver, B.C., had been awarded to Barnett, McQueen and Co., Fort William, Ont. The elevator will have capacity for about 1,250,000 bush., and the estimated cost is \$1,000,000.

**The C.P.R. has manufactured at its Angus shops, Montreal, a special hay press for baling hay bought in Canada by the British and French governments. It turns out a bale a minute, 14 by 17 by 22 ins., and averaging 100 lbs. in weight.**

A press dispatch states that the German Government has laid an eight track system between Berlin and Cologne, about 300 miles, for strategic purposes.



# Marine Department

## Ontario No. 2, Another Car Ferry for the Ontario Car Ferry Company.

An all steel car ferry, Ontario No. 2, a sister ship to Ontario No. 1, which is being operated between Cobourg, Ont., and Charlotte, N.Y., by the Ontario Car Ferry Co., under construction by the Polson Iron Works, Toronto, will probably be launched this month. The Ontario Car Ferry Co. is a combination of the G.T.R. and Buffalo, Rochester and Pittsburg Ry. interests, formed some years ago to handle the coal traffic originating on the latter company's lines, destined to points in Eastern Ontario on G.T.R. lines, the object being to eliminate the long haul around the west end of Lake Ontario. The business handled by the company has increased to such a degree that the addition of another vessel became necessary. The new one is almost identical with the one at present in service, which was described in Canadian Railway and Marine World, May, 1907.

It is of the shelter deck type, with four tracks for cars on the main deck, and will be propelled by twin screws. The main deck is of steel throughout, without wood covering; the shelter deck is of steel laid flush, with a deck house running throughout its greatest length, and containing accommodation for passengers, officers and crew. It has a wooden pilot house and bridge on top of the deck house forward, and a pilot house at the after end of the deck house. It is divided into six transverse watertight bulkheads, extending from the keel to the main deck, with a longitudinal bulkhead along the centre line in three watertight ballast tanks 13 ft. deep. Two of the these ballast tanks are immediately forward of the boiler room, and the third immediately aft of the engine room. The steel lower deck, laid throughout the forward and aft holds and both peaks, forms the top of the deep water ballast tanks. There are two shaft alleys, leading back from the engine room, one on each side, extending into the stuffing box bulkhead. The boiler room contains four single ended Scotch marine boilers placed amidships, with one firehold athwartships and one wing coal bunker on each side of the boiler room. The hull is bossed out on each side to enclose the propeller shafts. There are two steel pole spars without masts or sails.

The vessel has a capacity for 28 standard coal cars of 68 tons gross weight each, and 200 tons of coal in the bunkers. The draught will be about 16¼ ft. when fully loaded, and the vessel will have a normal working speed of 13 miles an hour, with reserve power to make 15 miles an hour under emergency conditions. Following are the principal general dimensions:

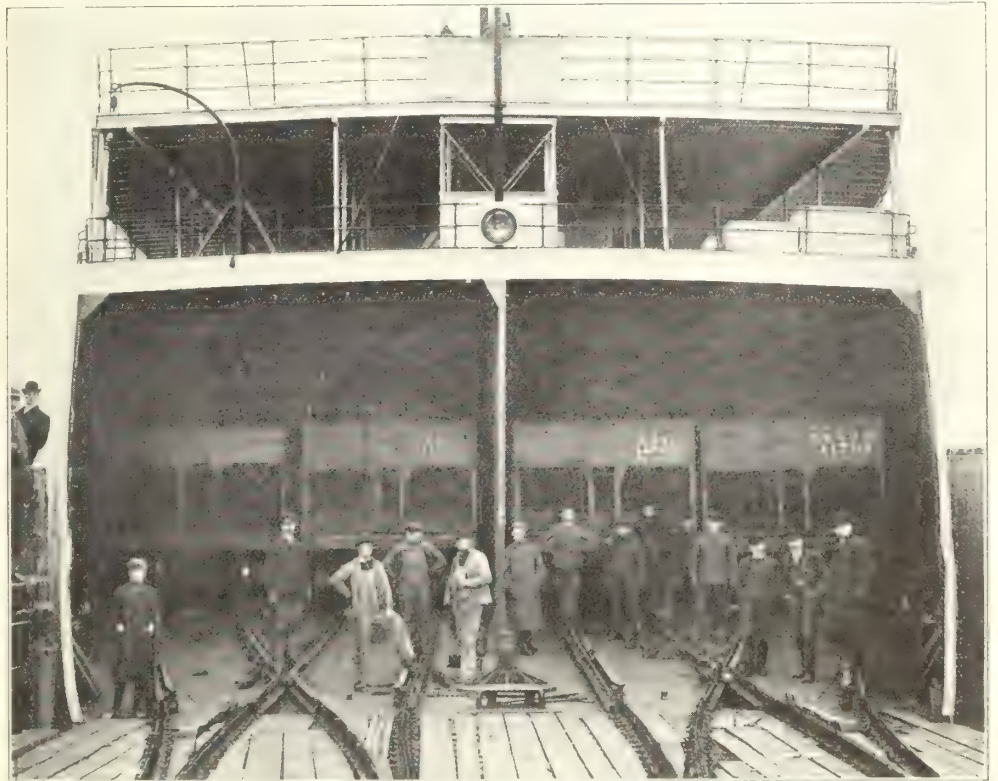
Length overall	318	ft.
Length between perpendiculars	307½	ft.
Beam moulded	54	ft.
Beam on main deck	56	ft.
Depth at centre, main deck to promenade deck	17	ft.
Depth at side, main deck to promenade deck	17	ft.
Draught of water full loaded	16¼	ft.
Camber of main and promenade decks	9	ins.
Depth to promenade deck	20½	ft.
Rise of floor	2	ft.

The vessel is built on the transfer system, with solid plate floors and bulb angle frames, with the steel plate extra heavy for working in ice, and not reduced forward. It is built to pass the inspection of the Great Lakes Register, and to receive its highest rating. The plates and shapes are

of mild open hearth steel; the stem, stern frame and rudder of hammered scrap iron; and the spectacle frame of cast steel in two parts.

The frames from the after peak bulkhead to the stern post are 8 by 3½ in., 19.17 lb. bulb angles, spaced at 24 in. centres; from the collision bulkhead to the after peak bulkhead, 10 by 3½ in. 26.6 lb. bulb angles, 24 in. centres; and forward of the collision bulkhead, they are of the same section as in the after peak, but spaced 18 in. centres on the water line. All the frames extend to the main deck in one length. Above the main deck, the frames are 8 by 3½ in. 19.3

lb. first or inner keelson, at 6¾ ft. from the centre keelson is of double 7 by 3 in. 16.1 lb. bulb angles, placed on top of the floor, fitted with a 17.5 lb. filler intercostally between the floors, and connected to the floors and shell by 3½ by 3½ in. 9.8 lb. angle clips. The second keelson, 13½ ft. from the centre keelson, along the inside of the side stanchions, on top of the floor is a single 10 by 3½ in. 26.6 lb. bulb angle, with 17.5 lb. plates fitted intercostally. The third, or outer keelson, is of double 7 by 3 in. 16.1 lb. bulb angles, attached to the main frames by 4 by 3 in. 8.5 lb. angle clips. Extra keelsons are fitted forward, one in each strake



Stern View of Car Deck, Exactly the Same on Both Car Ferries.

lb. bulb angles, spaced at 36 in. centres. The bulkhead frames are 5 by 5 in. 16.2 lb. angles, double rivetted on both flanges, with 6 by 3½ in. 15 lb. angles for stiffeners. The frames below the main deck, in the way of the bossing, are of 4 by 3½ in. 11.9 lb. angles and 15 lb. plate, with 3 by 3 in. 7.2 lb. angle reverse bars. The reverse frames are 3 by 3 in. 7.2 lb. angles, and on all the floors in the engine space, double reverse bars are used.

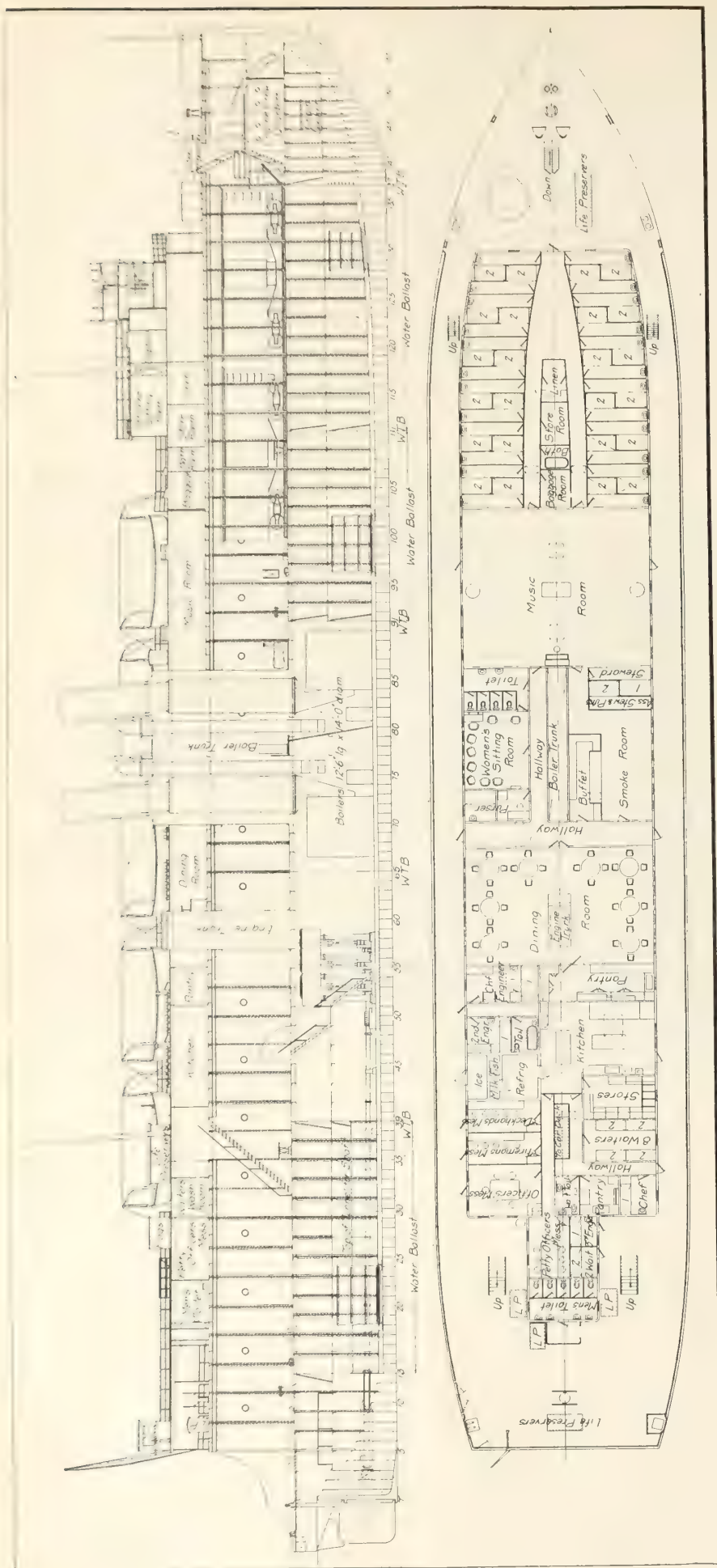
The floors are 33 ins. deep, of 17.5 lb. plate, except in the engine and boiler space, where they are of 20 lb. plate. The 17.5 lb. plates for the floor at the end of the vessel are increased in depth wherever necessary to suit the shape of the vessel. The floors are connected to the centre keelson by double 3½ by 3½ in. 8½ lb. angles.

The centre keelson is 45 ins. deep, of 25 lb. plate throughout, with double 5 by 4 in. 14.5 lb. angles top and bottom. On top of the floors, rivetted to the sides of the centre keelson by one flange, there is on each side a 12 by 3.05 in. 25 lb. channel. The side keelsons are of several kinds. The

of the shell plating, and there are also additional keelsons under the engine space.

The keel plates are 48 ins. wide, of 32.5 lb. plate amidships, reducing to 30 lb. plate fore and aft. The hull plating below the main deck is in 8 courses, the first 5 from the keel plate of 25.5 lb. plate, reducing aft to 21.5 lb., and the remaining 3, of 30.6 lb. plate, reducing aft to 25.5 lb. Above the main deck, there are 3 courses, the lower of 12.75 lb. plate, increasing to 15 lb. forward, and the upper two respectively 12.75 and 15 lb. plate throughout. The bilge keel is a 13 in. 27.95 lb. bulb plate, fitted to the plating by double 5 by 3½ in. 12 lb. angles, and carried amidships for 110 ft. Connection between the plating above and below the main deck is by a 20 lb. plate throughout from the lower strake of the upper plating, on each side of which, near the top, on each side is a 4 by 4 in. 14.3 lb. angle, the inner one of which connects to the main deck stringer. This side plate connects to the end of the main floor beams by 4 by 4 in. 11.3 lb. angle clips. On the outside, at the bottom of the side connecting plate,





Section and Plan of Promenade Deck on Ontario No. 2, for Ontario Car Ferry Company.

there is a 5 by 4 in. 14.5 lb. angle connecting this plate to a horizontal 22.5 lb. plate, which is connected to the upper strake of the hull plating below the main deck, by a 5 by 5 in. 14.3 lb. angle, narrowing the lower part of the hull 2 ft. in beam less than the upper portion. Between the outwardly projecting flanges of the two angles on the outside of the side connecting plate, there is a 13½ by 10 in. oak beam throughout, protected on the outside by a 10 by ¼ in. face plate.

The main deck stringer is a 30 lb. plate, 65 ins. wide for two thirds the length, tapering at the ends to 22.5 lb. plate 36 ins. wide, and rivetted to the connecting strip between the upper and lower part of the hull by the 4 by 4 in. 14.3 lb. angle mentioned before. The hold stringer is of double 7 by 3 in. 16.1 lb. bulb angles, with a 17.5 lb. plate fitted intercostally, and connected to the shell by 3½ by 3½ in. 9.8 lb. angles, and to the main frames by 4 by 3 in. 8.5 lb. angle clips. The lower deck stringer is a 14.75 lb. plate, 48 ins. wide for three quarters the length, reduced to a 15 lb. plate 36 ins. wide, fore and aft, and is connected to the shell and frame by a 3½ by 3½ in. 9.8 lb. angle. The upper hold stringer is 17.85 lb. plate, 39 ins. wide for three quarters the length, reducing to 15 lb. plate, 30 ins. wide, and connected to hull and frame by 3½ by 3½ in. 9.8 lb. angles. The promenade deck stringer is a 17.85 lb. plate, 72 ins. wide for two thirds the length, reducing to 15 lb. plate 42 ins. wide, and connected to the shell by 3½ by 3½ in. 11.1 lb. gunwale angles. The web plate is 17.85 lb. plate, with a 9 in. hole in each, midway between the stringers.

The deck plating for the main deck is 18 lb.; windlass deck, 12.5 lb. except under the windlass, where it is 20 lb.; lower deck, 12.5 lb.; and promenade deck, 10.2 lb. The deck beams for the main deck are 13 by 4 in. 32 lb. channels at 4 ft. centres; windlass deck, 10 by 3 in. 20 lb. bulb angles at 3 ft. centres; lower deck, 10 by 3.5 in. 26.6 lb. bulb angles at 4 ft. centres.

The six transverse bulkheads are watertight, with the collision bulkhead 32 ft. abaft the stem. The central stanchions in the hold and from lower to main deck are double 6 in. 13.3 lb. channels, spaced at 4 ft. centres. From the main to promenade deck, the central stanchions are the same size, only at 6 ft. centres. The side stanchions are also the same size, at 4 ft. centres, but are only carried up to the main deck. The upper ends of all the stanchions are braced by 17.5 lb. plate brackets. The coal pockets have 10 by 2.74 in. 20 lb. stiffener stanchions at 4 ft. centres, 16 ft. from the centre line. The coal pockets are formed by 12.5 lb. plating on the inner face of these stiffeners. The decking of the coal pocket consists of a double layer of 1½ by 8 in. pine planking, laid on 4½ by 3 in. 9.1 lb. beams at 24 in. centres.

The propelling machinery consists of two triple expansion, 20½ by 33 by 54 by 36 in. jet condensing engines, operating normally at about 110 revolutions per minute, both engines turning outward. The four boilers are fitted with forced draught, and they carry 180 lbs. pressure. Each boiler has three furnaces, 42 ins. diam. and 42 ins. long. The auxiliary machinery consists of two 12 by 16 by 18 in. duplex piston type ballast pumps, connected so as to individually fill or empty the ballast tanks; a 12 in. centrifugal pump, direct connected to an engine in the engine room and so arranged as to act as an air pump in emergencies; a fire pump; a 6 by 5 by 7 in. sanitary pump; a 4½ by 4 by 5 in. fresh water pump; and a 4½ by 4 by 5 in. cooler pump. There is also a 2 ton ice machine, working



on the carbon anhydride principle. The electric lighting plant consists of one 15 k.w. and one 20 k.w. generator. There will be a 16 in. searchlight.

There is accommodation on the main deck for 6 coal passers and 6 firemen on the port side, and 2 oilers, 2 watchmen, 4 deckhands and 2 water tenders on the starboard side, all situated forward. The windlass deck is directly over these quarters, from which lead the anchoring chains, which are normally stored in the chain locker on the hold deck, an enclosed pipe connecting the windlass deck with the chain locker, through the crew's quarters.

The promenade deck has accommodation for the ship's officers and passengers, with a promenade extending nearly the full length of the vessel. Forward on this deck are the passenger staterooms, 12 on each side of a double hallway leading forward from the music room. Each stateroom has two berths, giving accommodation for 48 altogether. Between the double hallway, there are the linen room, storeroom, bath room and baggage room. The music room extends the full width, and has a piano. Leading back from the music room, there is a hallway alongside the boiler trunk, connecting into which are the women's sitting room and toilet, and the purser's office and room. The other side of the boiler trunk contains the smoking room, with a buffet in one corner, and the steward's, assistant steward's and assistant purser's quarters. Back of this, there is a cross hall, leading out at either end to the deck, and in the centre leading into the dining room, which has 8 tables, with a seating capacity of 32. The engine trunk passes up through this room.

The kitchen, messes, and quarters for most of the officers are located back of the dining room. On the starboard side, connecting with the dining room, is the pantry, back of which is the kitchen, containing a full equipment. Connecting into the kitchen on that side, are the stores, back of which there is accommodation for 8 waiters, the cook's room, small pantry, and waiters' washing room. The port side, immediately back of the dining room, has the quarters for the chief engineer and 2nd engineer either side of a hall leading in from the deck. Back of this is the refrigerator, with separate compartments for the milk and fish. Back of this again there are three messes, deckhands', firemen's and officers', while at the end of a hall along the front of these messes, is the petty officers' mess. Adjoining, are the 3rd engineer's quarters, and accommodation for 2 waiters. The men's lavatory is in rear of these quarters.

On the forward end of the boat deck, there are located the navigating officers' quarters, with the pilot house in front, back of which is the captain's room, extending the full width, behind which, centrally placed, is a sitting room, on one side of which is the 1st mate's quarters, and on the other, the 2nd mate's, and accommodation for 2 wheelmen. The flying bridge deck is atop of the navigating officers' quarters.

### Grand Trunk Pacific Coast Steamship Company's Dock at Seattle.

We were officially advised, Nov. 26, that plans and specifications were being prepared for the rebuilding of the company's dock at Seattle, Wash., which was destroyed by fire, and that tenders would be invited for the dock itself on Nov. 30, and for the warehouse and building about three weeks later.

The dock will be 680 by 116 ft., extending

out into the harbor to the outer harbor line. It will be provided with a depressed track for its entire length, with a landing berth on the outside and with numerous adjustable cargo slips, and with a flush driveway the entire length made of Australian blue gum. The piling, as well as the bracing and capping, which will be submerged, will be creosoted. The general arrangement of the dock will be materially different from the former dock as dictated by the experience in the traffic of the port for the past five years. About 85,000 yards of gravel and rock were placed underneath the dock just previous to the fire, so that it will be very substantial and first-class in every respect.

The warehouse and office building to be placed on the dock will be three stories high at the street end, the design of the original building being restored. There will be six stores on the ground floor, 26 offices and stores on the second floor, and 20 on the third floor. The waiting room and other passenger accommodation will be as near to the street end as possible. The waiting room will be about 60 ft. square, extending from the north side of the building to the main corridor leading to the steamboats, and will be finished in stained Douglas fir, with an artistic domed roof the entire width of the building. There will be a roomy balcony over the corridor and offices on the south side of the building, reached by an ornamental staircase from the waiting room. Ticket offices, baggage check room, ladies' rest room and other conveniences will be provided, and the illumination will be by indirect method from the dome of the waiting room. The ends of the waiting room will be worked out into a transept in the building proper, which will make a very agreeable break and an ornamental feature. Other than this the balance of the shed extending to the outer end of the dock will be quite plain, and offices will only be built in on the second floor near the street end sufficient to accommodate the lines doing business on the dock.

The warehouse will be of slow burning wood construction, covered on the outside with galvanized iron and roofed with asbestos, to make it as nearly fireproof as possible. An expensive monitor will be built the full length of the shed with openings on the side for ventilation purposes. There will also be drop curtains and fire walls at

frequent intervals sufficient to give the protection required by the city fire ordinances.

The company's steamboats will be berthed on the south side, as usual, but well up the slip against the street end, and the landing stage and inclined walk leading to the waiting room floor will be entirely enclosed in the building itself, so that passengers going to and from the boats will be quite under cover all the year around. This arrangement has been decided on because of the convenience in getting passengers to and from the boats, and as a result of the experience with the fire, and all passenger accommodation is, therefore, arranged as near to the street end as possible, and in addition to that to make access to and from the boats as convenient as possible, thereby avoiding the long and unnecessary walk from the street to the outer end of the dock, which is still the present practice on all of the other docks in Seattle.

On Dec. 8 we were officially advised that a contract for reconstructing the dock had been given to Nettleton-Bruce-Eschbach Co. of Seattle, the work to be completed in three months. The total cost will be about \$75,000.

### Vancouver Dry Dock Projects.

Some information on this subject was published in Canadian Railway and Marine World for Oct., pg. 481, and Dec., pg. 555. Enquiry of Dominion Shipbuilding, and Drydock Co. elicited the following information on Nov. 25: "The clearing of our site has been completed, and last week the foundations were finished for the six buildings, as outlined in the prospectus, viz., machine shop, boiler shop, forging shop, foundry, pattern shop, stores, and general offices. Each of these buildings will be 250 by 68½ ft. in width. The contract for the dredging of the fresh water canal at the mouth of Lynn Creek, and also for the construction of the 4,000 ton marine railway and 1,000 ton railway have been awarded to the B. C. Granite Co., and the dredges are now in position and expect to be operating in the course of the next few days. We fully expect to have the first unit of our plant operating by spring, which will comprise the buildings above enumerated, together with the two marine railways and the fresh water canal."

### Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during November, 1914

ARTICLES		CANADIAN CANAL	U. S. CANAL	TOTAL
Copper.....	Eastbound	Short tons 456	23,998	24,454
Grain.....	"	Bushels 4,681,233	10,254,786	14,936,019
Building stone.....	"	Short tons		
Flour.....	"	Barrels 3,842	883,819	1,221,841
Iron ore.....	"	Short tons 114,612	1,001,167	1,115,779
Pig iron.....	"	"	2,666	2,666
Lumber.....	"	M. ft. b.m. 3,120	31,240	38,360
Silver ore.....	"	Short tons		
Wheat.....	"	Bushels 13,955,985	18,814,968	32,770,953
General merchandise.....	"	Short tons 3,585	1,325	4,910
Passengers.....	"	Number 274	18	292
Coal, hard.....	Westbound	Short tons 20,500	318,844	339,344
Coal, soft.....	"	" 62,619	895,763	958,382
Flour.....	"	Barrels		
Grain.....	"	Bushels		
Manufactured iron.....	"	Short tons 7,970	14,565	22,535
Iron ore.....	"	"		
Salt.....	"	Barrels 13,993	86,369	100,362
General merchandise.....	"	Short tons 51,867	69,606	121,473
Passengers.....	"	Number 132	4	136
Summary.				
Vessel passages.....	Number	407	900	1,307
Registered tonnage.....	Net	639,687	2,148,779	2,788,466
Freight—Eastbound.....	Short tons	670,235	2,007,450	2,677,685
Westbound.....	"	144,000	1,001,167	1,145,167
Total freight.....	"	815,185	3,229,183	4,044,368



## Mainly About Marine People.

The late ROBERT THOMSON, ship-owner, St. John, N.B., left an estate of \$343,000 in addition to life insurance.

CAPT. WILLIAM MCCLAIN, who died at Toronto, Dec. 7, aged 92, had been engaged in navigation on the Great Lakes since the early days of sailing vessels. He retired from active service some years ago.

Col. J. B. MILLER, President and General Manager, Polson Iron Works, Toronto, was presented with a gold headed cane, Mrs. Miller with a gold headed parasol, and Miss Margaret Miller with a necklace and locket, by the staff and employees of the company, Dec. 2, prior to leaving for a southern trip.

CAPT. W. H. FEATHERSTONHAUGH, Superintendent of Hulls, Canada Steamship Lines, Ltd., Toronto, died suddenly at Midland, Ont., Dec. 4. Prior to entering Canada Steamship Lines service he was Shore Superintendent, Inland Lines, Ltd., at Midland.

Commander C. D. ROPER, who was loaned by the British Admiralty to the Dominion Government, and acted for some time as chief of staff of the Department of Naval Service, has been given the command of the recently built destroyer Broke, one of the vessels which, at the outbreak of war, was under construction in British yards for the Chilean Government.

Capt. FRANK SCOTT of the Farrar Transportation Co.'s s.s. Collingwood, died in the Collingwood Hospital, Dec. 17, after a few days' illness, the direct cause of death being an abscess in the head near the right ear. He was for many years engaged in the operation of tugs in Collingwood harbor and on the Upper Lakes, but for the past ten years had been with the Farrar Transportation Co.

PETER PATON, who has been appointed Purchasing Agent, Canada Steamship Lines, Limited, Montreal, was born at New Lowell, Ont., Mar. 13, 1869, and entered transportation service May 1, 1911, since when he has been, to May 1, 1912, Western Travelling Agent, Northern Navigation Co., Winnipeg; May 1, 1912, to Mar. 1, 1913, Assistant to President, Northern Navigation Co., Sarnia, Ont.; Mar. 1, 1913, to Feb. 1, 1914, Manager, Northern Navigation Co., Sarnia, Ont.; Feb. 1 to December, 1914, Assistant Operating Superintendent, Passen-Ltd., Toronto.

Capt. OLIVER GILLESPIE, who died at Cornwall, Ont., Nov. 29, aged 87, was for nearly 60 years connected with navigation interests in that neighborhood. In his early days he was joint owner of the steamboats Manitoba and F. B. Maxwell, and was later interested in the American Line, operating steamboats between Clayton, N. Y., and Montreal. He subsequently owned the steamboat Garnet and ran it between Valleyfield and Montreal, and from this beginning was developed the Montreal and Cornwall Navigation Co., of which he was Managing Director for several years. He retired from active work about five years ago.

THOMAS HENRY, whose appointment as Passenger Traffic Manager, Canada Steamship Lines, Ltd., Montreal, was announced in our last issue, was born in Montreal, May 29, 1865, and entered transportation service in 1879, since when he has been, to 1881, ticket agent, Ottawa River Navigation Co., Montreal; 1881, local freight agent, same company, Montreal; 1881 to 1882, clerk in Audit Office, G.T.R., Montreal; 1882 to 1884, ticket clerk, City Ticket Office, G.T.R., Montreal; 1884 to 1887, clerk, Northern Pacific Ry.; 1887 to 1900, District Freight and Passenger Agent, same road, Montreal;

1900 to Feb. 27, 1913, Traffic Manager, Richelieu and Ontario Navigation Co., Montreal; Feb. 27, 1913, to Dec. 1, 1914, Operating Superintendent of Passenger Steamers, Canada Steamship Lines, Ltd., Montreal.



P287 Thomas Henry,  
Passenger Traffic Manager, Canada Steamship  
Lines, Ltd.



P344 Peter Paton,  
Purchasing Agent, Canada Steamship Lines,  
Ltd.

JOHN FRANKLIN PIERCE, who has been appointed General Passenger Agent, Canada Steamship Lines, Ltd., Montreal, was born at Chatham, Ont., Sept. 6, 1877, and entered transportation service, Oct. 14, 1896, since when he has been, to Oct., 1904, clerk, Richelieu and Ontario Navigation Co., Montreal; Oct., 1904, to Oct., 1910, chief clerk, same company, Montreal; 1910 to

1912, Travelling Passenger Agent, same company, Boston, Mass.; 1912 to 1913, District Passenger Agent, same company, Boston, Mass.; 1913 to Dec. 1, 1914, Assistant General Passenger Agent, Canada Steamship Lines, Montreal.

JAMES THOM, Canadian Manager, International Mercantile Marine Co., died at Westmount, Que., Nov. 26. During the early part of the year he had been in ill health, and in August he went to England and Wales for a holiday, returning to Canada in October, when his health had considerably improved. He later spent some time in Ottawa on business, where it is stated he contracted a chill, from which he did not recover. He had been intimately connected with the steamship business in Montreal for many years, and took a great and active interest in all improvements calculated to develop the business of the port, and to better conditions of navigation over the St. Lawrence route. He was born in Montreal, and at an early age entered the service of Thompson and Murray, merchants and shipping agents, there. This firm formed the Canada Steamship Co., of which he became Manager, remaining such until May 1893, when he was appointed Manager of the Hamburg American Line. In 1899 he was appointed Manager, Furness, Withy and Co., and on the resignation of John Torrance, Jan. 1, 1906, he was appointed Manager of the White Star Line. He held many public positions in Montreal, including the vice presidency of the Montreal Board of Trade, and the chairmanship of the executive council of the Shipping Federation of Canada. The funeral at Mount Royal Cemetery, Nov. 29, was attended by a large number of representatives of the transportation, shipping and mercantile companies.

## Changes in Organization, Canada Steamship Lines, Ltd.

W. E. Burke, Assistant Manager, and T. Henry, Passenger Traffic Manager, will remove their offices from Montreal to Toronto, Mar. 1.

J. F. Pierce, heretofore Assistant General Passenger Agent and General Baggage Agent, has been appointed General Passenger Agent, and will continue to perform the duties of General Baggage Agent. Office, Montreal.

Peter Paton, heretofore Assistant Operating Superintendent, Passenger Steamboats, Toronto, has been appointed Purchasing Agent, vice J. J. Phelan, assigned to other duties. Office, Montreal.

J. J. Phelan, heretofore Purchasing Agent, Montreal, has been appointed Assistant to Mechanical Superintendent. Office, Montreal.

**Halifax Dry Dock.**—An Ottawa press dispatch says that plans are being prepared in the Public Works Department for a dry dock at Halifax, N.S. This year's estimates voted by Parliament contained an appropriation of \$250,000 towards the construction of a first class dry dock at Halifax, of the same dimensions as the one now being built at Lauzon, Que., viz., 1,150 ft. long, 120 ft. wide at entrance, and 40 ft. deep at ordinary high water spring tides. The cost of such a dock would probably be about \$3,000,000. No site has yet been acquired, and it is not decided when work will be gone on with.

**International Waterways Commission, Canadian Section.**—C. A. Magrath, heretofore a commissioner, has been appointed Chairman of the Canadian Section, vice Hon. J. P. B. Casgrain, appointed Postmaster General. P. B. Mignault, K. C., has been appointed a commissioner.



### Additional Wharf Accommodation at St. John, N.B.

The formal opening of the additional wharf accommodation at Beacon Bar, West St. John, took place Dec. 10, and was celebrated by a luncheon at the Union Club, the guests including Hon. J. D. Hazen, Minister of Marine; Hon. R. Rogers, Minister of Public Works; G. M. Bosworth, Vice President, C.P.R.; C. A. Hayes, General Traffic Manager, Canadian Government Railways, and a number of other representatives of general transportation and shipping interests.

The contract for the work, involving 3,750 lin. ft. of wharfage, was awarded to the Maritime Dredging and Construction Co. about a year ago, and was divided into two sections, the first consisting of 1,190 lin. ft. of wharfage with back filling, and a temporary shed, all of which was required to be ready for operation by the opening of winter navigation, 1914; and the second section consisting of a wharf extension extending from the first section for 1,770 ft.

Of the first section of the work, which has been placed in service, the cribwork structure is on a stone foundation 5 ft. thick, and is 43 ft. high and 48 ft. wide at the base. The outer faces are double sheathed and sloping at the rate of 6 in 70 ft., and the rear faces are benched. On this cribwork there is a concrete superstructure 27 ft. high, 18 ft. wide at the base and 7 ft. wide at the top. The total height of the structure is 70 ft., the depth of water along the face of the wharf, at low water level, being 35 ft. This section is practically completed, the approximate cost being \$760,000. The second section of 1,770 ft. will be of the same width and height as the first section, except that the stone foundation will be 2 ft. high. It will cost \$575,000.

To provide access to the wharves, and as a site for trackage and warehouses, considerable filling in was required behind the wharves, and about 1,500,000 cub. yds. of material will require to be handled. About half of this work will be completed before the spring, and the balance during next season.

A temporary freight shed, which has been erected on berth 15, is a wooden structure 505 ft. long and 80 ft. wide, the outer wall being 25 ft. from the face of the wharf. The cost of the shed is \$16,000.

The dredging for the sites and berths of the Beacon Bar wharves has all been completed, and the remainder of the dredging on the bar will be finished by Mar. 31, except the removal of some ledge rock there and at the foul ground in the main channel, which will be dealt with next season.

This work is a part of a comprehensive scheme of development at West St. John, covering the conversion of the whole west front from these new wharves, practically to Partridge Island, into modern docks and terminal facilities; the extension of the breakwater to Partridge Island, and other works. It is also intended, in the near future, to replace the temporary shed on berth 15 with a structural steel building having grain conveyors, etc., and the St. John Board of Trade is urging on the Government that this work be undertaken and completed by next winter.

During the luncheon M. W. Doherty, Manager, Maritime Dredging and Construction Co., presented silver cigar boxes to the Ministers of Marine and of Public Works, and a silver cigar case to G. M. Bosworth, Vice President, C.P.R., as souvenirs.

### Rehearing of the Cases of the Stranding of the Steamships Saturnia and Montford.

At a rehearing, authorized at the request of Senator Choquette, which was held in Quebec, Nov. 18, 1914, when four additional witnesses were heard, the court consisted of Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. Lapierre and C. Koenig, nautical assessors.

The court found, after weighing the evidence adduced at the formal investigation regarding the *Saturnia* and at the rehearing, at which no evidence of material interest or importance was produced, that the pilot Jules Lachance committed an error of judgment in not making some endeavor to localize the spar buoy marking the sunken block prior to entering the traverse, as such should have been done, especially in view of the fact that the usual marks on shore were indistinct owing to the land being covered with snow. He was notified that the spar buoy was in its position, and it was proved that it was there; but owing to the stage of the tide and its rapidity he must have known that the buoy would be almost covered owing to the pressure of the tide against it, and it was therefore his duty to wait and definitely assure himself of its location. In view of the various adverse conditions existing on the morning, April 28, 1914, the court severely reprimands him and warns him to adopt every precaution in the future to ensure safety to the vessels he may pilot.

With regard to the Montfort case the court finds that the pilot, Francois Gaudreau, committed a grave error of judgment, and apparently got confused, indicating indecision and uncertainty. He had seen the west end of the Island of Orleans, estimated his distance off and shaped a course accordingly. He saw the fog banks rolling from the St. Charles River, and must also have seen the ice coming down, yet when he became enveloped in the fog he heard the sound of rivetting on the south shore, and he immediately ported his helm, offering the port side of his vessel to the force and influence of tide and ice, with the consequences which have already been given. In this instance he has given unmistakable proofs of unreliability, therefore the court adjudges that he be severely censured and fined \$100; but owing to the fact that he has already been penalized, the collection of the fine will not be enforced.

### Insurance Losses on the Great Lakes.—

A Detroit, Mich., press dispatch says:—"The Lakes Protective Association made a very good showing in 1914, which means underwriters had a profitable season, as the association carries 25% of the insurance on the bulk of freighters that are insured. Not one of the 19 vessels lost last season was enrolled in the association, members of which operate about 200 vessels. Only one boat in 100 was in an accident in which there was a total loss. The *Caldera* sunk the *W. H. Gilbert* in Lake Huron. The heaviest loss to the underwriters was the *Benjamin Noble*, which was insured for about \$120,000. Her cargo of steel rails was also insured."

**Fenders for British Battleships.** The Dominion Naval Department is dealing with enquiries relative to the supply of hazlewood or willow boughs to be used as fenders for British battleships. Prior to the war, Great Britain obtained supplies of this material chiefly from Scandinavian territory, but owing to the North Sea being closed to navigation, other sources of supply must be discovered.

### War Rates for Vessels Requisitioned by the British Admiralty.

A committee of steamship owners formed recently to suggest rates of payment for steamships which have been, or may be, requisitioned by the British Admiralty for various purposes during the war, has reported, and the following rates have been fixed by the Director of Transportation. They are stated to be generally less than those suggested by the committee.

For steamships of the first class cargo type, of from 3,000 to 4,000 gross tons, and having a speed of 13 knots an hour, 15s. 9d. a ton; 12 knots, 14s. 9d. a ton; 11 knots, 13s. 3d. a ton; 10 knots, 12s. 9d. a ton. Vessels over 4,000 gross tons, 6d. a ton less; vessels under 3,000 gross tons, 6d. a ton more. For the large fast passenger steamships, the figures run from 16s. 6d. a ton for 15 knot vessels to 25s. a ton for 25 knot vessels, each type requiring to be specially considered. Regulations providing for arbitration in any matters in dispute relating to such requisitioning, were given in *Canadian Railway and Marine World* for Dec., 1914.

### A Slide in the Welland Canal.

A slide, which was 600 ft. long, and on the westerly bank of the Welland Canal, about half a mile north of the Air Line Ry. bridge, occurred sometime in the night of Dec. 3, owing to continued low water in the canal, caused by north easterly winds, lowering Lake Erie level. Two slides in the bank had previously taken place at this point, one about 12 years ago and the other 6 years ago, and had been dredged out. These, with the present one, form a continuous slide some 2,000 ft. long. The bank, the upper part of which is soil deposited when the canal was constructed, is about 52 ft. above the canal bottom. The material moved is clay and the bank sank with practically a perpendicular fault and the underlying material was pushed out into the canal channel in the shape of a fan, narrowing the regular channel bottom of 100 ft. to one but 30 ft. wide at the middle of the slide.

Navigation for loaded full canal size boats was interrupted for about four days until a dredging plant, which was fortunately available at Thorold, removed enough material to permit of safe passage. The total quantity of material to be dredged from the canal prism to restore it to its former section will be in the neighborhood of 18,000 cu. yds. The portion remaining to be removed will be dredged out next spring before the opening of navigation.

We are indebted to L. D. Hara, acting Superintendent Engineer, for the foregoing particulars.

**Panama Canal Traffic.**—A report on the commercial operation of the Panama Canal, from Aug. 15 to Nov. 18, 1914, the first three months, shows the passage of 212 vessels, carrying 1,079,521 tons. The charge of \$1.20 a net ton on the vessels is equivalent to approximately 75c. a ton on the cargo. In the classification of the traffic, over 95% is grouped under four heads:—U.S. coast-wise trade; traffic between the Pacific coast and the U.S. and Europe; the trade of the west coast of South America with the U.S. Atlantic seaboard, and the U.S. trade with the far East.

The Fisheries Branch of the Department of Marine and Fisheries has been placed under the Department of Naval Service, which has hitherto had charge of the fisheries protection cruisers. The change is merely an administrative one, as both departments are under the Minister of Marine.



## Steamship Princess Margaret for British Columbia Coast Service, Canadian Pacific Railway.

The Princess Margaret, which was launched recently at Dumbarton, Scotland, and christened by Mrs. Rene Redmond, the youngest daughter of Sir Thos. Shaughnessy, is the first of two passenger steamships which are being built for the C. P. R., by Kenny Bros. They will be used in the British Columbia service between Vancouver, Victoria and Seattle. The principal dimensions are length 395 ft., breadth moulded 54 ft., depth to promenade deck 28¼ ft. Above the promenade deck is the boat deck, having at its forward end the wheelhouse and accommodation for the officers and the navigating appliances. In the midship portion there will be 42 staterooms, and a vestibule, panelled in white and lit by a very large dome skylight, having softly tinted glass. The forward panelling will be enriched with tapestry. The first class smoking room will be in Old English style, and the framing in antique oak, with white panels. At the forward end will be an old English fireplace, with brickwork panels. The boat equipment will be specially complete, and in addition to a motor boat, there will be com-

class passengers, with accommodation for 160 persons. The dining saloon will be in the Georgian style, framed in mahogany, painted white and relieved with delicate tints, the furniture being of polished mahogany. Immediately adjacent to this will be a range of pantries and galleys. Alongside the machinery space on the port side will be a range of refrigerating chambers, while on the starboard side will be accommodation for the engineers. The lower deck aft will be fitted with accommodation for the cooks, stewards, and junior engineers, while forward there will be rooms for second class passengers, seamen and firemen. All exposed promenades will be covered with awnings, and an elaborate system of electric fan ventilation will be fitted throughout the vessel, and will be provided with hot and cold water, the hot water system being kept in continuous circulation so that hot water will always be available. The ship will be lighted throughout by electricity. A powerful windlass will be fitted forward and steam capstan aft for prompt manoeuvring in port. Steering will be effected by steam

was bought by the Government last year from the Ottoman Line, Ltd., Newport, Eng., for use in the Hudson Bay service. The Hudson Bay season having expired, this vessel, with others from the Government service, was chartered to the Dominion Iron and Steel Co. and the Dominion Coal Co. for the winter. The Sharon sailed from Sydney, N.S., for Newport, Eng., and after reporting from Newfoundland by wireless, was not heard from. She was about a month overdue, Dec. 15, and all hope for her safety had been abandoned. She was a new vessel and cost about \$150,000.

**Hudson Bay Navigation.**—F. Anderson, in charge of the Hudson Bay Survey, refers in his report to the loss of the s.s. Ceareux and Allete. He speaks of extremely and unusually adverse conditions, and says that "if the navigation into Hudson Bay and Straits warrants the expense, by operating a powerful tug equipped with wireless, in connection with a wireless station on the north end of Mansell Island, masters of ships could be kept informed of ice conditions."

**The C.P.R. s.s. Metagama,** launched recently on the Clyde, was the fourth C.P.R. steamship to be launched in 1914. She is a sister vessel of the s.s. Missanabie, a full description of which was given in Canadian



Steamship Princess Margaret, for C.P.R. British Columbia coast service.

plete accommodation, not only for all persons for whom there will be berths, but also a considerable margin provided to deal with deck passengers, who might be carried for short voyages. On the promenade deck there will be 77 first class staterooms and 8 special rooms en suite. These special staterooms will be furnished in different styles, such as Adams, Sheraton, Chippendale, etc. At the forward end will be the observation room, which is a feature in the company's Pacific steamships. This will be white, with green treillage, having a domed ceiling overhead, with plastic ornament. The windows will be very large, with elliptic tops. The upper deck will be devoted to passenger accommodation, and will include a ladies' lounge in Georgian style, finished in white, with mahogany furniture, and provided with large mirrors, flanked by jardinières. The tea room and writing room will be framed in mahogany and have French windows opening into the vestibules, the circular top design being carried completely round the apartments. There will also be several suites de luxe. At the forward end there will be a large vestibule framed in polished oak, with an enquiry bureau, a barber's shop, boot brushing department, and hand baggage room. The main deck aft will be fitted up as a dining saloon for first

tiller acting on a balanced rudder, and controlled by telemotor from flying bridge. The vessel will be fitted with Marconi wireless telegraphy, and a special petrol driven generating set will be installed on the boat deck capable of working the wireless system, as well as lighting the decks, even if there be no steam in the boilers. The vessel will be propelled by geared turbines, with steam by oil fired water tube boilers.

A press dispatch from Vancouver, Dec. 27, states that C.P.R. officials there have been notified that the British Admiralty has requisitioned the company's steamships Princess Margaret and Princess Irene for war purposes. The first named was completed a few weeks ago, and was expected to sail for the Pacific coast shortly, while the latter has just been finished. They are of the latest type of vessel, specially constructed for the Pacific coast service, and are equipped with turbine engines using oil as fuel. They have a speed of 23 knots an hour.

**Loss of the s.s. Sharon.**—We have been officially advised that the Dominion Government steamship Sharon had been lost at some point in the Atlantic Ocean, presumably near Ireland, where she is stated to have struck a mine. The Sharon

Railway and Marine World for August, 1914. Among the number of up to date life saving and other appliances with which she is being equipped are the Babcock and Wilcox patent davits, which enable the lifeboats to be launched from either side of the vessel, and the Murray patent nested lifeboats, providing sufficient accommodation for all passengers and crews. There are no collapsible boats. The Metagama will carry one class cabin passengers, with accommodation for 520, and for 1,200 third class passengers.

**Ice in Hudson Bay.**—In the Naval Service Department's report for the year ended Mar. 31, 1914, issued recently, F. Anderson, in charge of the Hudson Bay survey, refers to the unusually adverse ice conditions, and states that if the navigation into Hudson Bay and Strait warrants the expense of operating a powerful tug equipped with wireless telegraphy on the north end of Mansell Island masters of vessels could be kept informed of ice conditions.

**Quebec Corporation of Pilots.**—At the annual meeting of the Corporation of Pilots for and below the Quebec harbor, at Quebec, Dec. 10, directors for the current year were elected as follows:—A. Lachance, J. B. Bernier, O. Noel, P. X. Lachance, A. Raymond and E. Lachance.



## Atlantic and Pacific Ocean Marine.

The s. s. Royal Edward, owned by the Canadian Northern Steamships, Ltd., is being used as a prison ship at Southend, Eng., for interned alien enemies.

The C.P.R. announces that it has chartered the Allan Line s.s. Grampian to operate with the s.s. Missanabie on the winter service between St. John, Halifax and Liverpool.

The Donaldson Line s.s. Cassandra, from Halifax to Glasgow, which was reported aground in the Clyde towards the end of November, was released with comparatively little damage, Nov. 27.

Ocean navigation on the St. Lawrence River was closed Dec. 4, the Manchester Liners s.s. Manchester Spinner being the last ocean vessel to leave Montreal for a port in Great Britain.

A press dispatch from Rotterdam, Holland, states that the Hamburg-American Line has issued a statement to the effect that the company has no intention of selling its vessels, which are tied up at United States ports during the war.

The Royal Mail Steam Packet Co.'s s.s. Glengyle has been placed in service between the British Isles and Pacific ports, including Vancouver, and she will be followed shortly by a sister vessel to be named Gleneffer.

The trial of the action of the C. P. R. against the owners of the s. s. Storstadt, for damage suffered in connection with the loss of the s. s. Empress of Ireland, has been set for Jan. 11, before Justice Dunlop in the Admiralty Court, Montreal.

The s.s. Alsatian, of the Allan Line, newly fitted and armed with eight 6-inch guns and a number of quick firers, has been chosen as the flagship of the Mercantile Cruiser Squadron, under command of Admiral De Chair, according to a recent press dispatch.

Canadian Steamship Lines s.s. Bermudian, which has for some years been operated on the route between New York and Bermuda, and which was recently requisitioned for transporting Canadian troops to England, is

being completely overhauled and renovated, chiefly in the berthing accommodation.

Furness Withy and Co.'s s. s. Algeriana from South Shields, Eng., for Boston, Mass., arrived at Halifax, N. S., Dec. 21, 26 days out. Some fears were entertained as to her safety, but on her arrival it was learned that she had had a mishap to her propeller, which was repaired before she proceeded to Boston.

The steamships Campanello and Principello, owned by Canadian Northern Steamships, Ltd., are being utilized in conveying horses, for war purposes, from Newport News, Va., to St. Nazaire, France. R. C. Vaughan, Assistant to Second Vice President, was in Newport News, recently in connection with the matter.

The C. P. R. s. s. Empress of Japan, under requisition by the British Admiralty as an auxiliary cruiser in the south Pacific, captured the collier Exford recently, with a number of the crew of the German cruiser Emden, which was sunk recently by the Australian cruiser Sydney, off Cocos Island. Some of the crew who had escaped from the Emden, had commandeered the collier, and were presumably on a raiding expedition.

Furness Withy and Co., who operate a number of steamships to Canadian ports, have removed their headquarters, for operating purposes, from Hartlepool, to Liverpool, Eng., where they have taken offices in the Royal Liver Building. It is not stated whether the removal is to be permanent, or is merely for general convenience, owing to the unsettled condition of affairs on the North Sea coast. In connection with the recent bombardment of Hartlepool, by German vessels, it is possible a portion of the company's docks and plant may have been damaged, but no information on that point is available.

The C. P. R. s. s. Empress of India, which was utilized for some years in the company's Transpacific service, and which was requisitioned by the British Admiralty at the commencement of the war, has been sold to the Maharajah of Scindia for a hospital ship for Indian troops. She is to be renamed Loyalty. She was built at Barrow in Fur-

ness, Eng., in 1891, her dimensions being, length 455.6 ft., breadth 51.2 ft., depth 33.1 ft.; tonnage, 5,905, gross, 3,003 register. She is equipped with two triple expansion engines with cylinders 32, 51 and 82 ins. diam. x 54 ins. stroke, 1,167 n.h.p., driving twin screws.

## Maritime Provinces and Newfoundland.

The Dominion Government s. s. Speedy, which was overhauled recently at Polson Iron Works, Toronto, has been assigned to the patrol and examination service, under the Naval Service Department at Halifax, N. S.

The Charlottetown Steam Navigation Co.'s s.s. Empress having ceased running between Point du Chene, N.B., and Summerville, P.E.I., for the winter, the Dominion Government steamship will operate between Cape Tormentine, N.S., and Summerville until further notice.

The Marine Department has placed a temporary light on the south point of St. Paul Island, Cabot Strait, in place of the lighthouse destroyed by fire recently. The temporary light has the same characteristics as that of the old lighthouse light, but of less power.

The C. P. R. s. s. St. George, which has been operating for some time in the Bay of Fundy service, is stated to have been equipped with guns and other armaments, and to have been generally remodelled internally, for patrol work at the mouth of the Bay of Fundy.

The Mayor of St. John, N.B., returned there from Ottawa, Dec. 7, after interviewing members of the Government relative to arrangements for the winter mail service. He stated that all the Atlantic mail steamships will go on to St. John after calling at Halifax, and will also call at Halifax on the outward voyage.

There was a considerable increase of shipping at Bathurst, N.B., during 1914, as compared with 1913. During 1913, 12 vessels, exclusive of tugs and dredges, and with a total tonnage of 6,474, entered the harbor, while in 1914, 26 vessels, totalling

## List of Steam Vessels Registered in Canada During November, 1914.

No.	Name	Port of Registry	Where and When Built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Engines, I.H.P.	Owner or Managing Owner
134186	Charles H. Lillies	Sault Ste. Marie, Ont.	Saugatuck, Mich. 1881	60 0	16 0	9 4	47	23 0	10 n.h.p.s.c.	A. B. McLean, Sault Ste. Marie, Ont.
134187	Donald Mac	Toronto	Toronto 1914	71 0	17 0	8 1	70	47	14	A. Quinn, Port Stanley, Ont.
134188	E. M. Peck	Sarnia, Ont.	Detroit, Mich. 1888	23 0	10 7	18 5	1644	974	104	Road Wrecking Co., Sarnia, Ont.
134189	Edna Mac	Midland, Ont.	Midland, Ont. 1914	51 5	15 0	7 0	35	14	16	French River Boat Co., Toronto
134190	Esperance	Quebec, Que.	Garston, Eng. 1910	100 3	23 1	12 0	198	4	80	Quebec Salvage & Wrecking Co., Montreal
134191	Esperance	Quebec, Que.	Garston, Eng. 1910	100 2	23 1	12 0	198	4	80	Quebec Salvage & Wrecking Co., Montreal

## List of Sailing Vessels and Barges Registered in Canada During November, 1914.

No.	Name	Port of Registry	Rig	Where and When Built	Length	Breadth	Depth	Reg. Tons	Owner or Managing Owner
134192	Bruxelles XXXX	Quebec, Que.	Dredge	Leyden, Holland 1907	125 1	21 2	8 8	198	L. C. G. & Co., Port Stanley, Ont.
134193	Cyprus	Toronto	Scow	Toronto 1914	17 0	4 1	12 9	34	G. Oler and G. H. Cassels, I. O., Toronto
134194	L.S. No. 9	Sault Ste. Marie, Ont.	Scow	South Chicago, Ill. 1909	49 6	24 0	6 0	104	S.L. Penhorwood, Sault Ste. Marie, Ont.
134195	L.S. No. 11	Vancouver, B.C.	Scow	South Chicago, Ill. 1907	95 0	25 0	7 8	138	Progressive Steamboat Co., Vancouver, B.C.
134196	B 3	Ottawa	Dredge	Vancouver, B.C. 1913	76 1	30 0	7 3	147	Progressive Steamboat Co., Vancouver, B.C.
134197	P.W.D. No. 13	Ottawa	Dredge	Ottawa 1914	90 0	30 0	7 8	101	Marine & Police W. Co.
134198	" 1	"	Scow	St. John, N.B. 1914	100 0	30 0	9 0	100	"
134199	" 2	"	"	" 1914	100 0	30 0	9 0	100	"
134200	" 3	"	"	" 1914	100 0	30 0	9 0	100	"
134201	" 4	"	"	" 1914	100 0	30 0	9 0	100	"
134202	" 55	"	"	" 1914	100 0	30 0	9 0	100	"
134203	" 56	"	"	" 1914	100 0	30 0	9 0	100	"
134204	" 102	"	Dredge	Backlog, Que. 1906	60 4	22	10	194	"
134205	" 103	"	"	Ottawa 1909	60 4	22	10	194	"
134206	Scow No. 117	"	Scow	Kanawana 1914	144 2	27 4	8	135	"
134207	" 118	"	Scow	" 1914	144 0	27 4	8	135	"
134208	No. 121	"	Dredge	Ottawa 1906	60 4	22	10	194	"
134209	R.M. & S. No. 9	Toronto	Scow	Toronto 1914	144 2	27 4	8	135	R.M. & S. No. 9, Toronto
134210	S.L. Penhorwood	Sault Ste. Marie, Ont.	Scow	Midland 1913	134 2	27 4	11	147	S.L. Penhorwood, Sault Ste. Marie, Ont.



10,844 tons, used the port. Of the 26 vessels, 4 were steamboats, the balance being sailing vessels, and all the traffic was for U.S. and Cuban ports.

Since the opening of winter navigation the new pilotage regulations for the port of Sydney, N.S., have been put into operation, providing that steamships employed in trading between any one or more of the provinces of Quebec, New Brunswick, Nova Scotia and Prince Edward Island, and any other or others of them, or employed between any port or ports in these provinces and the port of New York or any port of the U.S. on the Atlantic north of New York, will not hereafter be either wholly or partially exempt from the compulsory payment of pilotage dues, except steamships registered in Canada of not more than 120 tons register.

The Insular Steamship Co. announced recently that it had withdrawn its s. s. Westport III from service between St. John, N. B., and Yarmouth, N. S., and way ports, as the subsidy paid by the Dominion Government was not sufficient. The agreement with the Government provides for a service of 44 trips between Apr. 1, 1914 and Mar. 31, 1915, between St. John, N. B., Westport and Yarmouth, N. S., calling each trip both ways at Freeport, Tiverton, Little River, Mink Cove, Sandy Cove, Weymouth and Meteghan, unless ice prevents. The vessel is not to be taken off the route during December, January, February or March, unless for necessary repairs, in which case the contractors must supply a substitute vessel of about equal capacity, provided that such substitute be employed at a gross expense of not more than \$1,000 a month. The amount of the subsidy is \$5,500, payable in four equal instalments. This is an increase of \$500 more than was paid for the previous year.

### Province of Quebec Marine.

The Gaspé and Baie des Chaleurs Steamship has increased the number of its directors to five, and has changed its head office from Fraserville, Que., to Quebec, Que.

During the 1914 season 615 vessels of 229,255 tons passed through the Lachine Canal, against 664 vessels of 239,377 tons during the 1913 season. There were 9,049 vessel passages, 1,148 less than in 1913, but 4,989,972 tons of freight were handled, an increase of 12,413 tons over the previous year. The decrease in the number of vessels passing through the canal was caused by the lack of U.S. vessels, as there was an increase in the number of Canadian vessels.

Reports are current to the effect that the Bethlehem Steel Co., of the United States, is negotiating for the acquirement of the Canadian Vickers, Ltd., plant at Montreal, to enable it to execute orders stated to have been received from the British Government for submarine and other war vessels, for delivery during 1915. It is stated that the consent of the parent company in England has been obtained for the sale, subject to the concurrence of the Canadian directors. Conflicting statements have been made on the subject, both as to such orders having been placed, and as to any negotiations for the Vickers plant. A United States official statement was issued recently to the effect that the building of any such craft for belligerent powers by U.S. concerns was not consistent with that country's neutral position, and it was not believed that any such vessels were under construction in the U.S. for any of the powers. Press reports in the U.S. state that a number of light war vessels and submarines are being built for Great Britain in Massachusetts.

### Ontario and the Great Lakes.

The Welland Canal was closed for the winter, Dec. 18, the last vessel to pass through being the s. s. Carleton, owned by F. E. Hall and Co., Montreal.

The Montreal, Georgian Bay and Ottawa Canal Co. is applying to the Dominion Parliament for an extension of time for the commencement and completion of canals, etc., which it is authorized to construct, and for other purposes.

The whole of the Montreal Transportation Co.'s vessels with the exception of the Stormont, comprising 10 steamboats, 7 steam tugs and 30 barges, have been berthed for the winter at Kingston. The Stormont is wintering at Midland.

The lightship at Corsica Shoal has been removed from her position and taken to Port Huron for the winter. On the reopening of navigation she will be replaced by a new steel vessel, which is being fitted out at Detroit, Mich.

The St. Lawrence and Chicago Steam Navigation Co. has declared a dividend of 3%, payable Jan. 2, to shareholders of record Dec. 18, 1914. Some of the previous dividends were: 1904, 8%; 1905 to 1907, 10% a year; 1908, 7%; 1909, 8%; 1910, 3%; 1911, 5%; 1912 and 1913, 8% a year.

The Canadian canal at Sault Ste. Marie was closed to navigation for the winter, Dec. 14, and the U.S. canals, Dec. 16. One of the locks was kept open for a few days longer to permit the passing of some Government tugs to be used in certain works in progress.

The Marine Department has awarded a contract for the breaking of ice in the harbors of Port Arthur and Fort William, to the Canadian Towing and Wrecking Co., Port Arthur, for three years. The vessels to be used are the icebreaker St. Ignace, and the icebreaking tugs James Whalen, E. C. Whalen, A. F. Bowman, J. D. Morrison, Sarnia, Salvor and Gorman.

The contract for the erection of the steel superstructure of the St. Paul St. high level bridge over the old Welland canal at St. Catharines, Ont., has been awarded to the Canadian Bridge Co., for \$91,000, which is stated to be nearly \$20,000 below the local engineers' estimate. According to present plans, the projected hydro-electric railway will run over this bridge.

J. L. Weller, Engineer in Charge, Welland Ship Canal who was in Ottawa, early in December, for a conference with the Minister of Railways and Canals stated that good progress was being made in the construction of the new canal. Five sections are under contract and nearly 3,000 men are engaged. An article descriptive of the progress being made was given in Canadian Railway and Marine World for Dec. 1914.

The U.S. Lake Survey reports the levels of the Great Lakes in feet above tidewater, for November, as follows:—Superior, 602.45; Michigan and Huron, 579.92; Erie, 571.44; Ontario, 245.25. As compared with the average November levels for the past ten years Superior was 0.09 ft. below; Michigan and Huron, 0.47 ft. below; Erie, 0.43 ft. below, and Ontario, 0.49 ft. below. It was anticipated that Superior, Michigan and Huron would be 0.2 ft. lower, and Erie and Ontario 0.1 ft. lower during December.

A press report from Sarnia, Nov. 18, stated that the Northern Navigation Co.'s s.s. Noronic had been drydocked at Lorain, Ohio, for extensive changes in her hull. It is stated that 2 ft. is being added to each side of the hull below the water line, thus giving her an extra width of 4 ft. below the

water line. It is also stated that the reason for this alteration is that she is somewhat top heavy and she has to carry a large quantity of pig iron ballast to keep her steady.

The Ottawa and Hull town planning commission is recommending to the Government that the headway for vessels on the Rideau canal be reduced to 12 ft., and that large vessels which require greater headway be required to dock at Dows Lake at the foot of Bronson Ave., where an extension of the Ottawa Electric Ry. be made to take care of people travelling to and from the passenger vessels; that fixed bridges be permitted, giving a clearance of 12 ft., between Bronson Ave. and the Ottawa River, and that above Bronson Ave., if any bridges are built that they be movable, or high level.

### Manitoba, Saskatchewan and Alberta.

The Northern Alberta Steamship Co., Grouard, Alta., has assigned to J. A. MacKinnon, Edmonton, Alta., for the benefit of creditors.

The Dominion Public Works Department did a considerable amount of work during 1914 in surveying and charting the Red River, between Selkirk and Lake Winnipeg, and this, in conjunction with that already done in the neighborhood of St. Andrew's locks, etc., will give a complete chart for navigation between the International Boundary and the lake.

It was announced in Winnipeg, Dec. 4, that the Dominion Public Works Department would commence work almost immediately on the construction of one of the three wharves on the Red River, which were recommended by the Winnipeg Harbor Commission recently. The one which will be taken in hand first is known as the Rover St. wharf, located between Annabelle and Macfarlane Sts. It will be 400 ft. long and about 30 ft. wide, and built on piles. It will cost about \$90,000, which includes the necessary dredging, etc.

### British Columbia and Pacific Coast Marine.

The Dominion Government has changed the German name of the dredge Fruhling, to number 303.

The Yukon River was closed Dec. 4, which is said to be the latest date for closing on record, except in 1905, when it was closed Dec. 17.

The Dominion Marine Department is arranging to have obstructions in the Fraser River, caused by blasting in connection with the construction of the Canadian Northern Ry., near Yale, removed. It is stated that the Government intends to try and hold the company responsible for the cost.

J. S. MacLachlan, Resident Engineer, Department of Public Works, Victoria, B. C., read a paper before the Canadian Society of Civil Engineers, Victoria and Vancouver branches, at Victoria, Dec. 11, on harbors generally, with special reference to Victoria harbor and the works now in progress there.

The Marine Department has issued a new edition of tide tables for the Pacific coast for 1915, with an abridged edition giving tables for Vancouver and the Sandheads, with slack water for the First Narrows and Active Pass. The complete edition includes a record of the results obtained in determining the time of slack water in the more important passes.

The Marine Department has issued a notice providing that every vessel entering the



eastern channel of Barkley Sound must call at Banfield and obtain a pass from the senior naval officer to enable her to proceed. Every vessel desiring to fish in the eastern channel must also obtain a pass, which will only be valid for the time indicated on it. All vessels in Barkley Sound must obey the instructions of the officers of the patrol vessels stationed there. No vessel will be permitted to pass through Satellite Pass. Vessels are free to pass to the westward of the eastern channel and through Junction Passage to the Alberni Canal without obtaining passes.

The first war prize court ever held in the Dominion was constituted at Ottawa, Dec. 15, when Justice Cassels of the Exchequer Court deal with the question of the s.s. *Belas*, which was seized by the customs officers at Quebec after the outbreak of war. The vessel's papers disclosed that she was a German vessel, built in 1875, and owned by J. Wimmer & Co., Hamburg. The Dominion Government claimed her condemnation, together with cargo, as "good and lawful prize and droits of the Admiralty." An appearance was entered by a Portuguese subject, who claimed that she had been purchased from the German owners prior to the war, but it transpired that the transfer had not been completed, and it was ordered that the vessel and cargo be detained until the conclusion of the war.

**Grain Shipments from Montreal.**—A report prepared in Montreal regarding the shipments of grain from the port in 1914 shows that there was a very large increase in quantity over 1913. It is stated that the large increase is partly due to the lateness of the 1913 crop, much of which was shipped early in 1914, and that a large quantity of U. S. grain was forwarded through Montreal. The war also caused some increase in the amount handled. The following table gives the approximate amounts shipped during 1914, compared with the figures for 1913:

	1914.	1913.
Wheat .....	60,839,376	33,187,474
Flax .....	181,908	7,808,342
Oats .....	8,492,983	7,279,880
Barley .....	4,588,945	5,087,489
Rye .....	125,746	210,808
	74,228,958	53,573,993
Flour .....	2,751,934	2,504,565

The U. S. Steamboat Inspection Service in the year ended June 30, 1914, inspected 7,930 vessels, with a gross tonnage of nearly 10,000,000. There were 232 accidents during the year on vessels subject to inspection, resulting in a loss of 105 passengers and 477 members of the crew. One passenger was lost for each 3,029,000 passengers carried. The report recommends legislation to require fireproof construction on all excursion steamers hereafter built, and that the designs for the hulls and boilers of all vessels hereafter built should be first examined and approved by a corps of inspectors in the office of the supervising inspector general.

**New Pilotage Stations in Great Britain.**—The British Admiralty has issued a notice to mariners providing that, in view of the extension of the system of mine defence, pilotage has been made compulsory for the Rivers Humber and Tyne, in England, and Firth of Forth, Moray Firth, and Scapa Flow, in Scotland. Pilotage stations have been provided at convenient points, where vessels must call for and drop pilots. All the places named front on the North Sea.

**Life Saving Appliances.**—An order in council has been passed providing rules for life saving appliances on foreign going steamships and for coasting and inland steamships, and cancelling part 8 of the rules for the inspection of steamboats. The new

rules are the same as have been adopted by the British Board of Trade, and are of the same standard as those required by other governments.

During the war, in order to meet the conditions prevalent owing to the dislocation of shipping on the east coast of Great Britain, the Government railway executive committee, responsible for the operation of British railways, has made certain preferential rates, and it is anticipated that further preferences will be granted later on.

Brass furnace linings are said to have their life doubled by the use of oil fuel instead of coke.

## Transportation Conventions in 1915.

- Jan. 19-21.—American Wood Preservers' Association, Chicago, Ill.
- Mar. 16-18.—American Railway Engineering Association, Chicago, Ill.
- April.—American Association of Demurrage Officers, Boston, Mass.
- Apr. 28.—Association of American Railway Accounting Officers, Atlanta, Ga.
- May.—Association of Railway Claim Agents, Galveston, Tex.
- May.—Railroad Master Tinnners', Copper-smiths' and Pipefitters' Association.
- May 4-7.—Air Brake Association, Chicago, Ill.
- May 17-19.—Railway Storekeepers' Association, Chicago, Ill.
- May 17-20.—International Railway Fuel Association, Chicago, Ill.
- May 20-21.—American Association of Railroad Superintendents, San Francisco, Cal.
- May 21-24.—American Association of Freight Agents, Richmond, Va.
- May 26-28.—Master Boiler Makers' Association, Chicago, Ill.
- June 9-11.—American Railway Master Mechanics' Association, Atlantic City, N.J.
- June 14-16.—Master Car Builders' Association, Atlantic City, N.J.
- June 15.—Train Dispatchers' Association of America, Minneapolis, Minn.
- June 16.—Freight Claim Association, Chicago, Ill.
- June 22-25.—Association of Railway Telegraph Superintendents, Rochester, N.Y.
- July.—American Railway Tool Foremen's Association.
- July 14-17.—International Railway General Foremen's Association, Chicago, Ill.
- Aug. 17.—International Railroad Master Blacksmiths' Association, Philadelphia, Pa.
- September.—Roadmasters' and Maintenance of Way Association.
- Sept. 14-17.—Master Car and Locomotive Painters' Association of the United States and Canada, Detroit, Mich.
- Sept. 21-24.—Railway Signal Association, Salt Lake City, Utah.
- October.—American Association of Dining Car Superintendents.
- October.—American Railway Bridge and Building Association.
- Oct. 4-8.—American Electric Railway Association, San Francisco, Cal.

## Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated.

- Canadian Car Service Bureau, J. Reilly, Manager, 401 St. Nicholas Building, Montreal.
- Canadian Electric Railway Association, Acton Burrows, 70 Bond Street, Toronto.
- Canadian Freight Association (Eastern Lines), G. C. Ransom, Canadian Express Building, Montreal.
- Canadian Freight Association (Western Lines), W. E. Campbell, 502 Canada Building, Winnipeg.
- Canadian Railway Club, J. Powell, St. Lambert, Que. Meetings at Montreal, 2nd Tuesday each month, 8.30 p.m., except June, July and August.
- Canadian Society of Civil Engineers, C. H. McLeod, 176 Mansfield St., Montreal.
- Canadian Ticket Agents' Association, E. de la Hooke, London, Ont.
- Central Railway and Engineering Club of Canada, C. L. Worth, 409 Union Station, Toronto. Meetings at Toronto, 3rd Tuesday each month, except June, July and August.
- Dominion Marine Association, F. King, Counsel, Kingston, Ont.
- Eastern Canadian Passenger Association, G. H. Webster, 54 Beaver Hall Hill, Montreal.
- Engineers' Club of Montreal, R. W. H. Smith, 9 Beaver Hall Square, Montreal.
- Engineers' Club of Toronto, R. B. Wolsey, 94 King St. West, Toronto.
- Great Lakes and St. Lawrence River Rate Committee, Jas. Morrison, Montreal.

- International Water Lines Passenger Association, M. R. Nelson, New York.
- Niagara Frontier Summer Rate Committee, Jas. Morrison, Montreal.
- Nova Scotia Society of Engineers, A. R. McCleave, Halifax, N.S.
- Quebec Transportation Club, A. F. Dion, Quebec.
- Ship Masters' Association of Canada, Capt. E. Wells, 45 St. John St., Halifax, N.S.
- Toronto Transportation Club, W. A. Gray, 143 Yonge St., Toronto.
- Western Canada Railway Club, Louis Kon, Box 1707, Winnipeg. Meetings at Winnipeg, 2nd Monday each month, except June, July and August.

## Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

**Canadian Locomotive Co.** has paid the usual 1¼% quarterly dividend, due Jan. 1 on its preferred shares.

**Independent Pneumatic Tool Co.**, Chicago and Montreal, has issued circular E, describing and illustrating a new line of Thor portable electric drills.

**Canadian General Electric Co.**—The Lieutenant Governor of Ontario, J. S. Hendrie, has been elected a director of the Canadian General Electric Co., vice Senator Jaffray, deceased.

**Edison Storage Battery Co.**—F. V. McGinness, Sales Engineer of the Edison Storage Battery Co., Orange, N.J., has been appointed Assistant Manager of the Railway Department, taking the position of W. F. Bauer, who was recently made manager of the company's Chicago office.

**Steel Co. of Canada.**—One of the executive officers says: "Our General Manager, Robt. Hobson, is in London but he is not there in connection with any new financing of the company. We hope that he will be successful in securing orders from the various Governments in connection with their present requirements for the war."

**Safety Car Heating and Lighting Co.**—Harry Bayne, who has been connected with electrical and manufacturing interests in Canada for a number of years, has been appointed General Agent for Canada and Newfoundland for the Safety Car Heating & Lighting Co., of New York. He will have offices in Montreal and Toronto. R. H. Harvey remains with the company in Montreal, as heretofore.

**Edison Storage Battery Co.**—The fire that destroyed part of the Edison phonograph works at Orange, N.J., on Dec. 9, did not in any way affect the Edison Storage Battery Co. One end the large concrete buildings of the battery works is across the street from Mr. Edison's private laboratory which was saved, and this, as well as the rest of the plant, escaped unscorched.

**Standard Underground Cable Co. of Canada Ltd.**—H. C. Barber, who has been appointed on the sales force of the Standard Underground Cable Co. of Canada, Ltd., Hamilton, Ont., which manufactures electric wires and cables, cable terminals, junction boxes and other cable accessories, is a graduate of the Faculty of Applied Science, Toronto University, and has occupied positions on the engineering and executive staffs of the Toronto and Hamilton hydro electric departments, also on the Packard Electric Co.'s sales force at St. Catharines, Ont. He will advise customers in regard to installation problems.



L'Air Liquide Society, Montreal, has issued Oxy-Acetylene Welding and Cutting and its Applications, 60 pgs., 6 by 9 ins., thoroughly illustrated. Among the illustrations of special interest to Canadian Railway and Marine World readers are: part of water tube boiler made by welding; cutting iron bridge at Toronto; cutting bridge to pieces and burning off rivet heads; welding a rudder; adding metal to worn out dredge bucket; part of bow of s. s. Empress of Britain removed by the cutting blow pipe following a collision in the St. Lawrence; building up a worn out electric railway rail with the oxy-acetylene blow pipe; welded rail connection on electric railway; locomotive wheel reclaimed by welding; patch cut out of locomotive boiler and patch welded in; locomotive cylinder welded; cracks welded on locomotive dome; oxy-gasoline cutting outfit for railway yards, wrecking equipment, etc.

#### KETTLE VALLEY RAILWAY COMPANY.

NOTICE.—The Kettle Valley Railway Company will apply to the Parliament of Canada, at its next session, for an Act—

1. Extending the time within which it may construct the following lines of railway, all in British Columbia, previously authorized:—

(a) From Summer Creek or One Mile Creek to Copper Mountain and Voigt Mining Camps.

(b) From Vernon to Penticton via Kelowna.

(c) From the terminus of the branch authorized by paragraphs (b) of section 2 of chapter 101 of the Statutes of 1911, to Otter Summit.

(d) From a point on the line described in paragraph (c) at or near Tulameen up the Tulameen River, a distance of about 50 miles.

(e) From Penticton to Osoyoos Lake.

(f) From Summer Creek to Allison or Princeton and thence to Granite Creek Coal Areas.

(g) From Grand Forks to point 50 miles up North Fork of Kettle River.

(h) From Midway to Hedley.

(i) From Penticton to Nicola.

2. Ratifying and confirming an agreement between the company and the Vancouver, Victoria & Eastern Railway and Navigation Company respecting joint section between a point near Princeton and Otter Summit.

And for other purposes.

Dated at Toronto, this 15th day of December, 1914.

C. B. GORDON, Secretary.

Pringle, Thompson, Burgess & Cote,  
Ottawa agents.

#### CANADIAN NORTHERN ONTARIO RAILWAY COMPANY.

NOTICE is hereby given that the Canadian Northern Ontario Railway Company will apply to the Parliament of Canada, at its next session, for an Act confirming and ratifying an agreement between the Campbellford, Lake Ontario and Western Railway Company respecting the terminals at Belleville, also confirming and ratifying an agreement between the Georgian Bay and Seaboard Railway Company and the Canadian Northern Ontario Railway Company respecting joint tracks and terminals at Orillia.

GERALD RUEL,  
Chief Solicitor.

Toronto, 2nd December, 1914.

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#### CANADIAN PACIFIC RAILWAY COMPANY.

NOTICE.—The Canadian Pacific Railway Company will apply to the Parliament of Canada, at its next session, for an Act (1) extending the time within which it may construct and complete the following lines of railway (a) from a point on its Kleinberg-Sudbury Branch between Bolton Junction and Palgrave to a point at or near Campbellville (Ontario); (b) from Asquith northerly and northwesterly about 20 miles (Saskatchewan). (2) Ratifying and confirming an agreement between the company and the Canadian Northern Ontario Railway Company respecting terminals at North Toronto, and for other purposes.

Dated at Montreal the 25th November, 1914.

W. R. BAKER,  
Secretary.

Pringle, Thompson, Burgess & Cote,  
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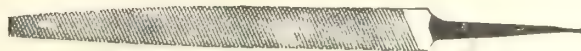
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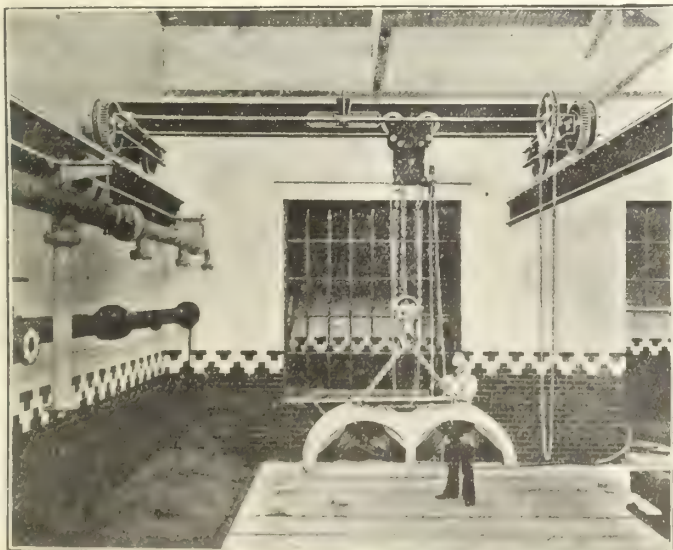
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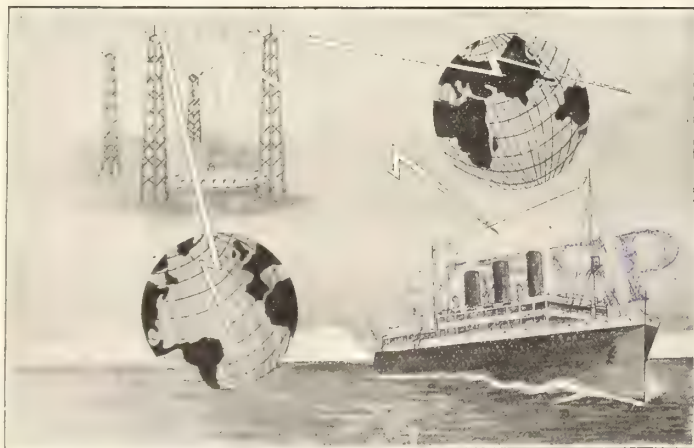
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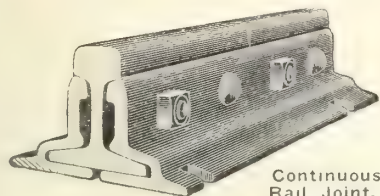
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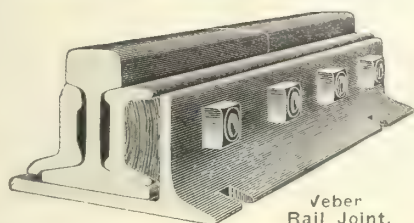
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Makers of Base Supported and 100% Rail Joints for Standard and Special Rail Sections, also Girder, Step or Compromise, Frog and Switch, and Insulated Rail Joints protected by Patents.



Continuous Rail Joint.



Veber Rail Joint.

<b>Over 50,000 miles in use.</b>	<b>HIGHEST AWARDS</b> Paris, 1900; Buffalo, 1901; St. Louis, 1904	<b>Rolled from Best Quality Steel.</b>
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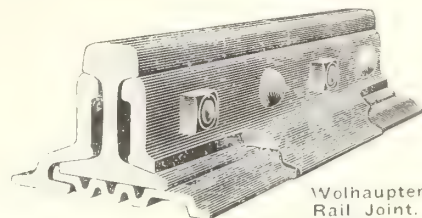
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Boston, Mass.	India Bldg.
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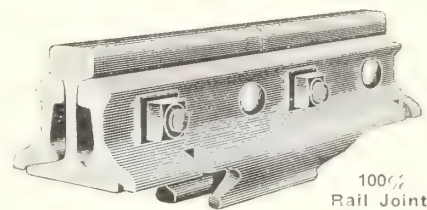
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CATALOG ON REQUEST



Wolhaupter Rail Joint.



100% Rail Joint.

# The Holden Company, Limited

Extends Compliments of the Season and Heartiest Good Wishes to all their friends and customers for a very Bright and Prosperous New Year. They also gratefully acknowledge the many kind favors received during the year just ended.

**Head Office: 354 - 356 St. James Street, Montreal**

342 Adelaide St. W.  
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429 Pender St. W.  
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**W**HY not start the New Year with the determination to get the best treatment for your Locomotive, Stationary and Marine Boilers?

There is nothing on the market to compare with the Bird-Archer Company's Polarized Treatment for removing scale and stopping corrosion and pitting. This material is manufactured in solid form, powder, extract and liquid form.

Analysis of boiler feed water will be made without charge.

Sole Manufacturers,

**The Bird-Archer Company, 90 West Street, New York, N.Y.**

Canadian Factory, Winnipeg, Manitoba.

Laboratory and Factory, Philadelphia, Pa.

Agencies throughout the world.





The sailor, like any other person, has a natural desire to rise. You want to become an officer—if possible, to command your own craft. Or you want to become a marine engineer.

But seamanship alone will not place you on the quarterdeck nor qualify you as engineer. Your years of training before the mast or in the stokehold will avail you nothing beyond your monthly wages as a seaman or stoker.

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The I.C.S. system of teaching navigation and marine engineering will enable you to get what you need without coming on shore, and at no expense other than the price of the Course, which is within reach of every sailor, no matter how small his wages.

To succeed with an I.C.S. Course requires only that you be able to read and write. You are not required to leave your ship to learn; you study and recite in the fore-castle, on the deck, or in any other part of the ship that is convenient for reading and writing.

Completion of one of these Courses will enable you to pass any examination required to obtain a license for master, mate, or marine engineer.

*Fill out and return the attached coupon and the I.C.S. will tell you how they can prepare you for examination.*

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Box 1072, Scranton, Pa.

Ocean Navigation  
Lake Navigation  
Coastwise Navigation  
Marine Engineer  
Motor Boat Running  
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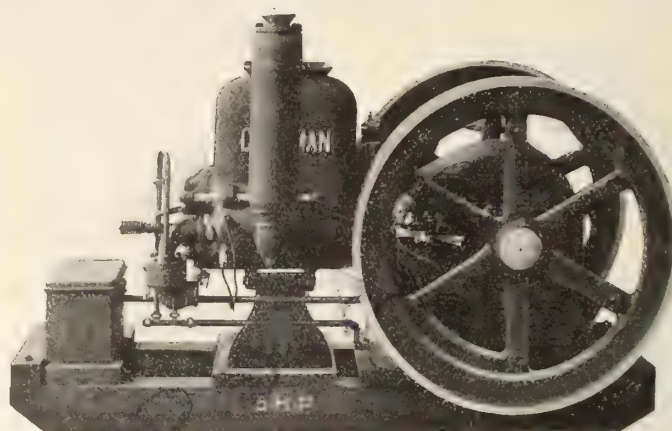
Electric Car Running  
Tel. and Tel. Engineer  
Mechanical Engineer  
Bookkeeper  
Stenographer  
Locomotive Engineer

Name \_\_\_\_\_  
St. and No. \_\_\_\_\_  
City \_\_\_\_\_  
Present Occupation \_\_\_\_\_  
Employed by \_\_\_\_\_

## Chapman Contractors' Engines

Don't  
get an  
old  
fashioned  
antiquated  
Engine.

Buy  
a  
Chapman.



All  
working  
mechanism  
on  
one  
plate.  
  
Only  
20  
pieces.

Loss of time on contract work costs money. This can be prevented with a Chapman Engine. Buy an extra plate or cam box, then if anything goes wrong with one, put on the other, and in a few minutes you can have your engine running again. Only four bolts to take off. If we charged twice the price we are asking for our Engine they would then be better value than the cheapest you can buy.

Write for Catalogue "G"

## Ontario Wind Engine & Pump Co., Ltd.

Write Nearest Branch.

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## Which Method

prevails in your plant? Does it take two men to do one man's work.

Why don't you replace that old antiquated tool with a new up to date

## Reece's New Screw Plate

These pictures do not exaggerate conditions as you can actually see them, if you will visit Machine Shops throughout the country.

Lessen your cost by giving your mechanics a REECE'S NEW SCREW PLATE.

**BUTTERFIELD & CO., Inc.**  
ROCK ISLAND, QUE.



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The best way to educate your employes to the safety habit is by signs.

The "SAFETY FIRST" sign will be before them many times each day and warn them of the constant danger they are subject to in the course of their duties.

Enamelled iron signs, on account of the brilliancy of their colors, attract immediate attention. They never fade and are as good in ten years' time as the day they are put up.

We make to order in any colors, with any lettering or design.

We will be pleased to quote you prices and submit sketches on request.

**Acton Burrows**  
*Limited*

70 Bond Street, Toronto

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*Lachine Bridge*

Turntables, Roof Trusses, Steel Buildings, Electric and Hand Power Cranes, Structural Metal Work of all Kinds  
*Beams, Channels, Angles, Plates, etc., in Stock.*

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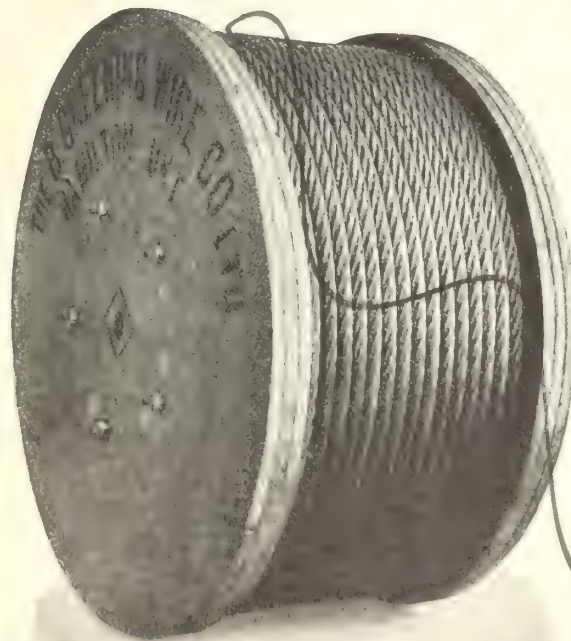
Works at LACHINE LOCKS, P.Q.

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**Crucible Cast Steel**

**Best Plow Steel**

**Acme Brand**

**Galvanized Guy Wire for Smoke Stacks**

MANUFACTURED BY

**The B. GREENING WIRE CO., Limited**  
Hamilton, Ont. Montreal, Que.



# HUNT-SPILLER IRON

HAS THE  
STRENGTH AND WEARING QUALITIES

that are absolutely necessary in

## LOCOMOTIVE CASTINGS

ELIMINATES ENGINE HOUSE REPAIRS

*Made Only by*

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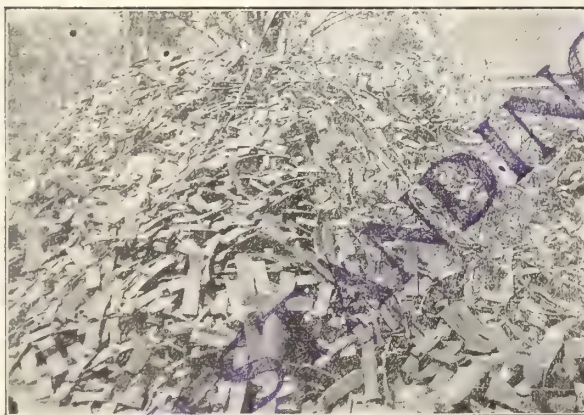
W. B. LEACH, President and General Manager.

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So. Boston, Mass.

J. G. Platt,  
Sales Manager.

Canadian Representative,  
Canuck Supply Company, Limited,  
392 St. James St., Montreal, P.Q.

## BRAKE SHOE SCRAP REDUCED TO THE ABSOLUTE MINIMUM



The Steel Back Brake Shoes here pictured were all worn down practically to the steel back.

The average weight of 100 shoes taken at random from this pile was about 5 1/2 lbs.

The roads using these shoes received about twice as much brake shoe service as could have been gotten from ordinary unreinforced shoes. It paid them and it will pay your road to use Steel Back Brake Shoes.

Manufactured in Canada.

### AMERICAN BRAKE SHOE & FOUNDRY CO.

The HOLDEN CO., Ltd., Agents, 354 St. James St., Montreal.

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### AGENT

Enameled iron signs for station names and doors are ideal.

They always command attention and look bright and attractive. They never fade and will last a life time.

**They Save Money.  
Write for Prices.**

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Offices throughout the Civilized World.

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Correspondence Invited.

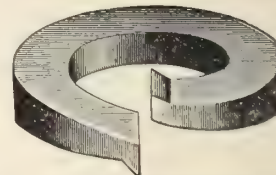
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Halifax, N.S.; Hamilton, Ont.; London, Ont.; Montreal, Que.; Ottawa, Ont.; Quebec, Que.; St. John, N.B.; Toronto, Ont.; Vancouver, B.C.; Calgary, Alta.; Edmonton, Alta.; Winnipeg, Man.; Victoria, B.C.

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We also make plain coils and tail nut locks

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F. H. HOPKINS & CO., Agents, Montreal.



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must be  
reliable.



That is why so many Canadian Bridge Builders prefer their Hoists to be of **BEATTY-MAKE.**

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## THE GARTSHORE-THOMSON PIPE & FOUNDRY CO.

MANUFACTURERS OF

LIMITED



3 inches to 60 inches diameter

FLEXIBLE AND FLANGE PIPE AND SPECIAL CASTINGS

**FOR WATER, GAS, CULVERT AND SEWER  
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## COMPLETE HYDRAULIC EQUIPMENT FOR RAILWAY AND SHIP BUILDING PLANTS

Wheel Presses, Keel Plate Bending Presses, Riveters,  
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Centrifugal Pumps, Pumping Engines, Gas Plants, Gas Power  
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Wire Rods,  
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### and Cable Accessories

Cable Terminals,  
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Miscellaneous Cable Accessories of  
all Kinds,  
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For detailed information, samples,  
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**Standard Underground Cable  
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Montreal, Que. . Seattle, Wash.  
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### BRITISH COLUMBIA SOUTHERN RAIL- WAY.

NOTICE—The British Columbia South-  
ern Railway Company will apply to the Par-  
liament of Canada at its next session for an  
Act extending the time within which it may  
construct its railway from Michel to Kan-  
anaskis, and for other purposes.

Dated at Montreal the 25th November,  
1914.

H. C. OSWALD,  
Secretary.

Pringle, Thompson, Burgess & Cote,  
Ottawa agents.

### SOUTH ONTARIO PACIFIC RAILWAY.

NOTICE—The South Ontario Pacific Rail-  
way Company will apply to the Parliament  
of Canada, at its next session, for an Act  
extending the time within which it may con-  
struct its railway from a point at or near  
Hamilton to a point on the Niagara River  
at or near the City of Niagara Falls, and  
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Dated at Montreal the 25th November,  
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H. C. OSWALD,  
Secretary.

Pringle, Thompson, Burgess & Cote,  
Ottawa agents.

### MANITOBA & NORTH WESTERN RAIL WAY.

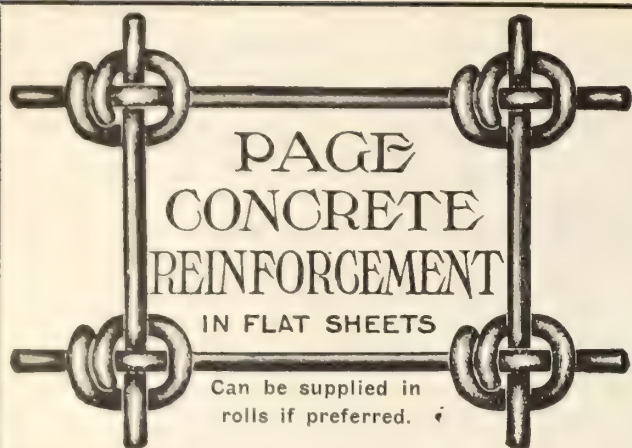
NOTICE—The Manitoba & North West-  
ern Railway Company of Canada will apply  
to the Parliament of Canada, at its next  
session, for an Act extending the time  
within which it may construct its railway  
from a point at or near Theodore to a point  
between Govan and Lanigan, and for other  
purposes.

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## FOR CONCRETE ROAD PAVEMENT, WALKS, BUILDING FLOORS, ETC.

We are the originators of this wire reinforcement in flat sheets, and it is coming into universal use wherever introduced. We have supplied many carloads of it this past season.

The standard mesh for road pavement is 6 x 12 inches; for bridges and building floors, the standard is 3 x 6 inches. Also, other meshes as desired. All sheets 4 feet wide, and any length specified that can be loaded in cars.

*Samples will be sent upon request.*

We also supply Iron Fences, Fire Escapes, Office Wire Work, and all kinds of Builders' Wire and Iron Work

## THE PAGE WIRE FENCE CO., Limited

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TORONTO MONTREAL WALKERVILLE ST. JOHN, N.B.

# THE CANADIAN BRIDGE CO., Limited

WALKERVILLE, ONTARIO

LOCOMOTIVE  
TURNTABLES  
ROOFS  
STEEL BUILDINGS

Manufacturers of

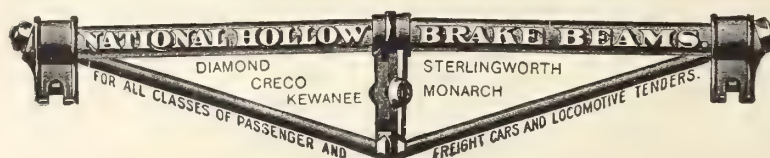
Railway and Highway

# BRIDGES

STRUCTURAL  
IRON WORK  
OF ALL  
DESCRIPTIONS



## CHICAGO RAILWAY EQUIPMENT CO.



New Canadian Office and Works :

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Can be depended upon. They represent Crucible Steel in its highest stage of development, and are recognized as Standard Brands in every country where steel is used.

We carry the largest stock of High Grade Tool Steel in Canada.

All principal sizes Annealed and Unannealed.

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We license manufacturers and railways to build and use the pay-as-you-enter car, the patents on which are owned by us.

## Ross & McDonald

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Malleable Castings of Every Description.



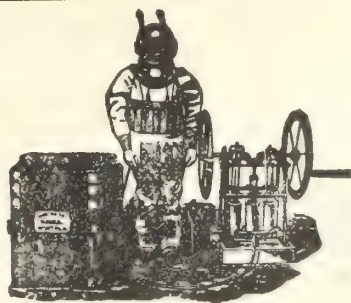
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Utilizes Blown-off Products from Locomotive Boilers to Heat Water for : :

*Washing Boilers at 120°  
Filling Boilers at 180° - 210°*

HIGHEST IN EFFICIENCY  
MODERATE IN COST  
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**F. W. MILLER HEATING CO.**  
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For Sale or Hire  
Brass Founder and Coppersmith  
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## The Ottawa Car Manufacturing Co., Limited

*Builders of*

**ELECTRIC CARS, FINE  
CARRIAGES, WAGONS,  
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They are adapted for severe service and are result producers in every sense.



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## NICKEL SHOT—HIGH AND LOW CARBON INGOTS—TWO SIZES, 25-LB., 50-LB.

Electrolytic Nickel—99.80%

Prime Metals for the manufacture of Nickel Steel, German Silver, Anodes, and all remelting purposes. Our Nickel is produced as rods, sheets, strip stock and wire.

**METAL** alloy. We are Sole Refiners of this natural stronger than steel, non-corrosive alloy. Produced as rods, flats, castings, sheets, strip stock and wire. Ask for descriptive booklet.

Send inquiries direct to us.

**THE INTERNATIONAL NICKEL COMPANY, - 43 Exchange Place, New York**

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BARE AND INSULATED ELECTRICAL WIRES AND CABLES.

*Prompt Shipment from factory or nearest warehouse.*

Head Office and Works, **TORONTO**

Sales Offices and Warehouses: 401 Lake of the Woods Bldg., Montreal, 150 Princess St., Winnipeg, Macdonald, Marpole Co., 427 Seymour St., Vancouver; Canada West Electric Ltd., Regina and Edmonton; Northwestern Engineering and Construction Co., Ltd., Calgary



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for OIL for Pyle ELECTRIC equipment or SPECIAL to Blue Print, and carry a large stock of standard headlight reflectors, burners, burner parts, felt wicks and chimneys.

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*Demand the Best*

You Can Supply  
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RICE BEER**

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**RAILWAY EQUIPMENT**

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Have on hand at all times

**First - Class Freight and  
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Also

**Contractors' Locomotives  
Cars, Rails, Etc.**

Specifications with Prices  
on Application

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Draw Cut Pillar Shapers. Special Draw Cut Locomotive Axle Box Shapers. Locomotive Cylinder Planers. Portable Slotters, Steel Foundry Shapers, Frog and Crossing Shapers, Stationary and Portable Keyway, Cutters, Finished Machine Keys. Office and Works, MUSKEGON HEIGHTS, MICH., U. S. A.

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FLUSH OR DRY

**DUNER CO. 101 S. CLINTON ST.  
CHICAGO**





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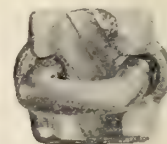
Isn't it worth a whole lot to know that your guy ropes will not pull out when severe strains are thrown upon them? Isn't it worth a lot to feel perfectly easy about the wire rope fastenings that hold the heavy girders, etc., you are hoisting into position? Such security is worth a great deal, but it costs but a trifle more than the uncertain, unreliable performance of cast or malleable clips.

**"CROSBY" CLIPS** are safe. They are drop forged from special analysis steel and galvanized. **They Hold!**

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**AMERICAN HOIST & DERRICK CO., St. Paul, Minn., U.S.A.**

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Stuart Machinery Co., Winnipeg, Man. Gorman, Clancey & Grindley, Edmonton and Calgary, Alta.  
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STEEL ROLLING DOORS & SHUTTERS  
BI-FOLDING & SLIDING DOORS  
APPROVED FIRE DOORS

FOR PIER SHEDS-FREIGHT HOUSES-ROUND HOUSES & SHOPS

THE KINNEAR MFG. CO.  
COLUMBUS, OHIO. U. S. A.

CANADIAN REPRESENTATIVES

EASTERN & CENTRAL  
MUSSENS LTD. MONTREAL

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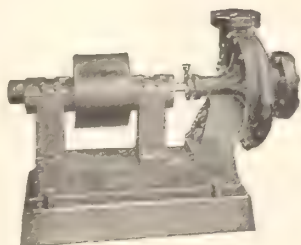


## SAXBY & FARMER, LIMITED

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MAKERS OF RAILWAY SIGNALS, INTERLOCKING APPLIANCES,  
HIGHWAY CROSSING GATES AND BELLS

## Distinguished for Quality



Wherever centrifugal pumps are used "American" centrifugals are distinguished for their quality, reliability and superior efficiency. They are made in a large variety of styles to meet every possible pumping condition, instead of attempting to adapt locations to a single type of pump.

Catalogue 132 describes about 50 styles. Write for it.

**The American Well Works**

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Winnipeg

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Commercial Acetylene Co.

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## AIR BRAKES AND FITTINGS

Canadian Westinghouse Co.

## ALLES

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Steel Co. of Canada

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The Holden Co.

## ASBESTOS

Can. H. W. Johns-Manville Co.

## ASH HOISTS, TELESCOPIC

Herbert Morris Crane & Hoist Co.

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Nova Scotia Steel and Coal Co.

Jas. W. Pyke & Co.

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M. Beatty & Sons

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F. H. Hopkins & Co.

Polson Iron Works

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The G. and S.W. Rwy., Albert Harbor Goods Station, Grneock, N.B.  
"B. & W." 30 Tons Electric Travelling Goliath Crane, 70 Feet Span

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For Docks, Railways and Warehouses

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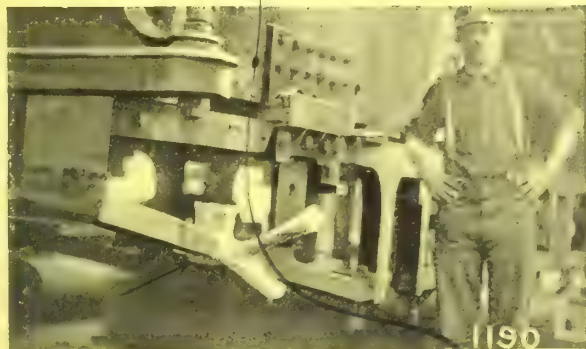
HEAD OFFICE FOR CANADA,

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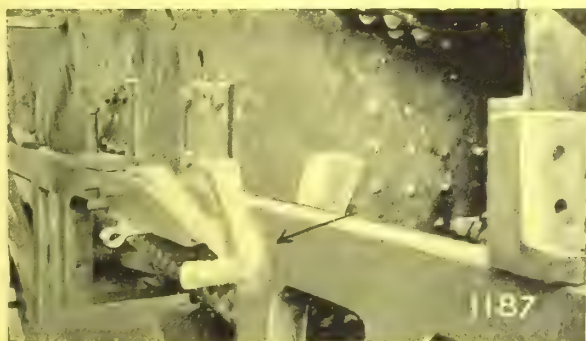
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# Difficult Frame Welding Made Easy with Thermit



Thermit Weld on Eng. 802 of Grand Trunk Pacific, Transcona, Man.



Frame welded with Thermit by Illinois Central R.R., Centralia, Ill.



Pamphlet No. 2144, Second Edition.

You can weld a frame quickly and economically with Thermit, whether it is broken in the splice, under the fire box, close up to the cylinder, or at any other point. It is not necessary to take the frame down, as all welds can be made with the frame in place.

The Thermit process can also be used for repairing broken connecting rods, guide-yokes, cross heads, and many other sections.

The Welding in of heavier frame sections is an easy matter when Thermit is used for this purpose and a permanent job is assured.

No other process of welding is so quick and uniformly efficient and economical in operation as the Thermit Process.

The proof is in the fact that to-day 435 railroad shops in North America are using Thermit regularly for this class of work and are returning their engines to service in from 10 to 24 hours.

## Get This New Book.

We have just issued a new pamphlet of instructions for the use of Thermit in railroad shops, known as pamphlet No. 2144. This should be in the hands of every railroad man, as it tells how and why the Thermit Process of welding will save thousands of dollars every year in repair costs. Write for it to-day.

## Goldschmidt Thermit Company

103 Richmond St. W., Toronto, Ont.

90 West Street, New York

329-333 Folsom Street, San Francisco

7300 South Chicago Avenue, Chicago



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## THIS ISN'T A "CUSS WORD."

- ☐ It's only the well-known Canadian slogan used in the way many manufacturers use it, "wrong way to."
- ☐ Many place it before **Quality**, before **Service**, sometimes before even **Business Integrity**.
- ☐ They make it the **principal figure** in their sales pictures, instead of using it as a **background**.
- ☐ They are trying to sell on **Canadian Patriotism**, not on **Quality and Merit**.



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QUALITY is built into them!

SERVICE follows them from coast to coast!

AND—BUSINESS INTEGRITY stands behind  
our generous guarantees.

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# Canadian Railway AND Marine World

ESTABLISHED 1898.

Number 201

TORONTO, CANADA, FEBRUARY, 1915

Subscription Rates, Page 61



## Track Tools

**“Made in Canada”**

**QUALITY**—The “Best” in Material, Design and Workmanship. The Equal of any Imported Tools.

**GUARANTEE**—We Will Replace Free of Charge any of our Tools Found Defective.

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60-Ton Baldwin-Westinghouse Locomotives Equipped With Westinghouse Motors and H-L Control

A development in electric railway operation is the handling of cars to and from steam road interchange points and industrial plants.

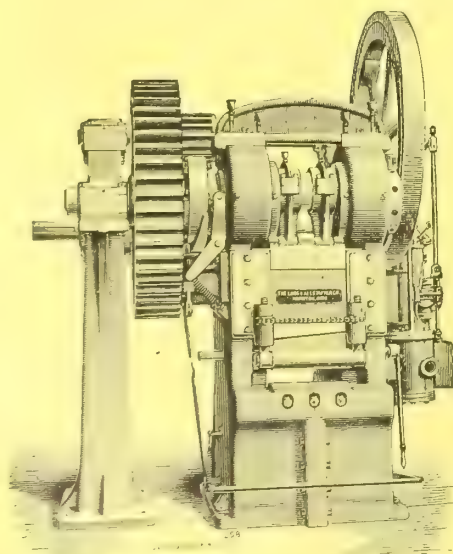
The Niagara Junction Railway is effecting reliable and economical handling of freight by means of two Baldwin-Westinghouse Electric Locomotives equipped with Westinghouse motors and H-L Control.

While this road has only about four miles of main line yet it handles 1800 to 2000 cars per month.

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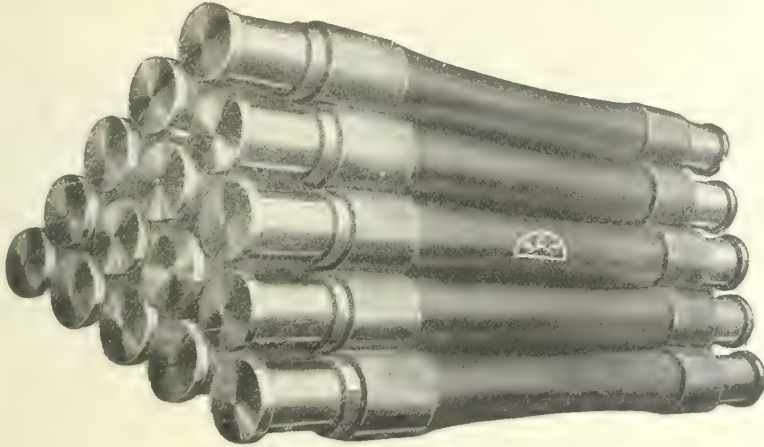
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We are prepared to furnish all kinds of forged steel axles for cars, freight, passenger and electric, and for locomotives, including drivers, engine trucks or tender trucks.

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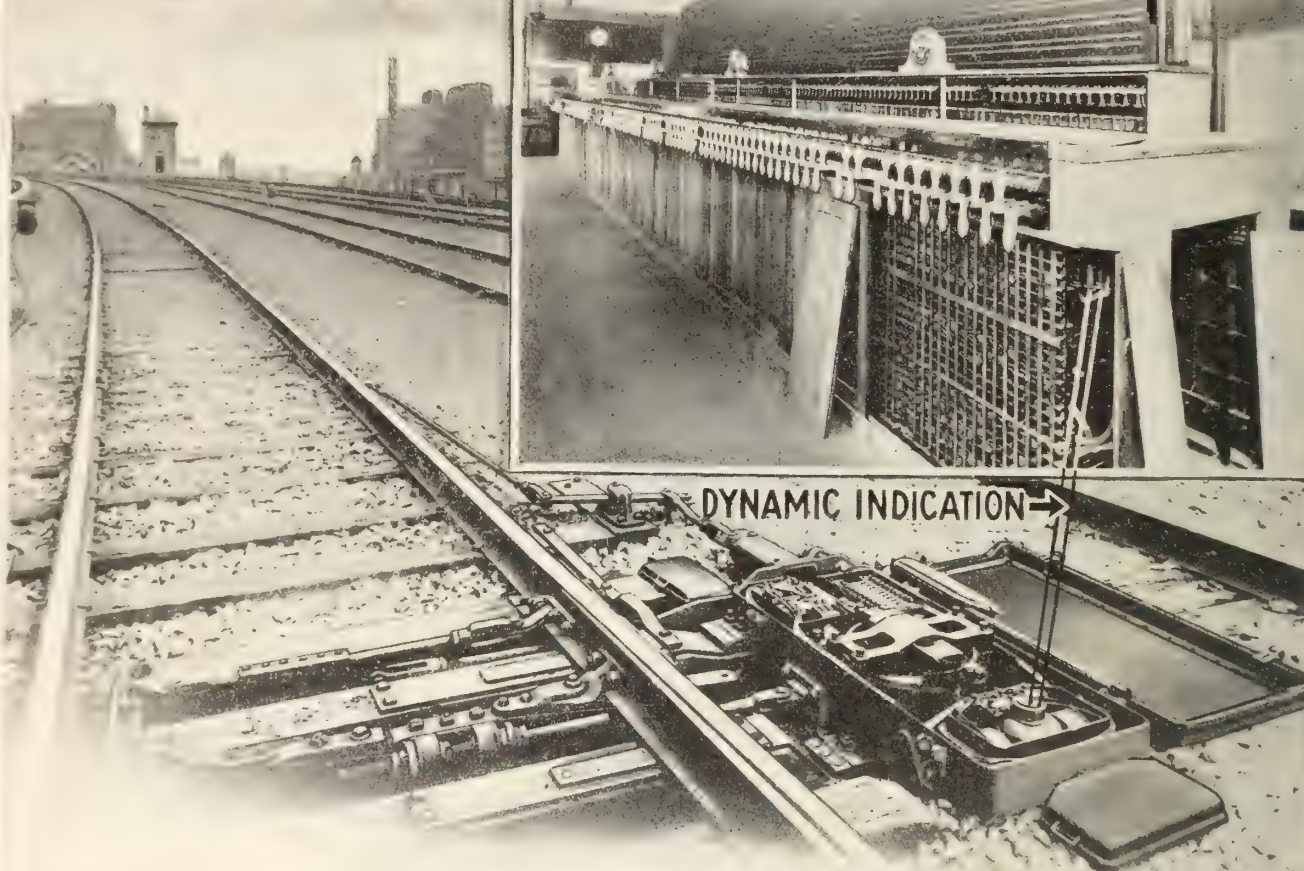
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# Why Dynamic Indication is the always-safe principle in G R S Electric Interlocking



The fundamental safety first principle of **G R S Electric Interlocking Dynamic Indication** remains as it was invented 13 years ago. This test of years is the most convincing evidence in the unflinching integrity of Dynamic Indication.

This indication is not secured from energy existent at the function prior to the movement of that function and dependent only on closing of a single break in the indication circuit, as is the case in A. C. and battery indication systems; but being a dynamic current generated by the momentum of the motor, it can be secured only after actual operation of the function. Since it is impossible to obtain an indication upon the lever controlling the function in any other way than by this generated current pro-

duced by the motor after the completed movement of the function, this system is **always safe**. Furthermore, dynamic indication is solely and **only a G R S principle**.

This **only — always — safe** principle of Dynamic Indication with several other features has brought this system into marked favor with the result that 80% of the power interlocking in use to-day is **G R S Electric**.

This system is equally suited to the 8 and 24 lever plant as it is to the Grand Central Terminal which is the largest interlocking in the world.

Why not install the **only — always — safe — system**, the **G R S Electric Interlocking** employing Dynamic Indication?

*“ Safety First ”*

GRS

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**OF CANADA LIMITED**

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# Meeting One Financial Obstacle to Adequate Signal Protection

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The advantage in this respect of

## Simmen Automatic Block Cab Signals



is shown by the fact that none of the four roads which are operating the Simmen System have found it necessary to provide any special organization or additional labor for inspection purposes.

The reason for this is that the track and overhead installation of the Simmen System is so simple (involving no apparatus along the track except standard telephone overhead construction and simple signal rails) that the regular track and line maintenance labor is ample to care for these elements.

All operating electrical apparatus is either in the cab or in the dispatcher's office.

The cab apparatus is easily inspected when the car is in for regular inspection.

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This enormous comparative saving in maintenance costs is proved by the experience of the four roads on which the **Simmen System** is now, and has for some time been, standardized.

The importance of this fact in any signal installation is obvious.

## THE NORTHEY-SIMMEN SIGNAL CO., Ltd.

### TORONTO

Simmen Automatic Railway Signal Co., Buffalo



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Correspondence invited.

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# Which Will You Have 100% or 50% Efficiency?

*An Electric Weld Bond does not depreciate at the terminals.*

*A % Bond terminal of this type gives:*

211600	C M	Effective	Carrying	Capacity	Now
211600	"	"	"	"	in 5 Years
211600	"	"	"	"	" 10 "
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211600	"	Average or 100% Efficiency			

*A Bond which depends upon mechanical contact for its connection with the rail will depreciate at the rate of 10% per year.*

*A % Bond terminal of this type gives:*

211600	C M	Effective	Carrying	Capacity	Now
105800	"	"	"	"	in 5 Years
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105800	"	Average or 50% Efficiency			

*Think It Over*

## The Electric Railway Improvement Co.

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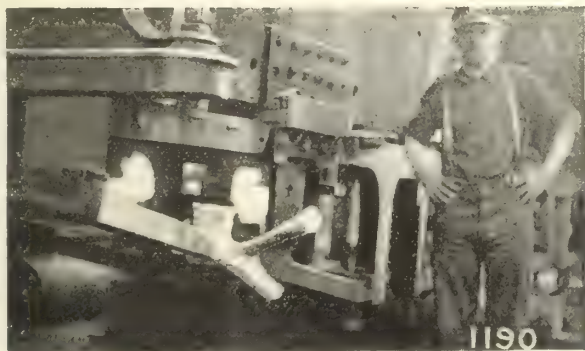
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# 440 Railroad Shops Use Thermit Because It "Delivers the Goods"



Thermit Weld on Eng. 802 of Grand Trunk Pacific,  
Transcona, Man.



Frame welded with Thermit by Illinois Central R.R.,  
Centralia, Ill.



Pamphlet No. 2144, Second Edition.  
GET THIS BOOK

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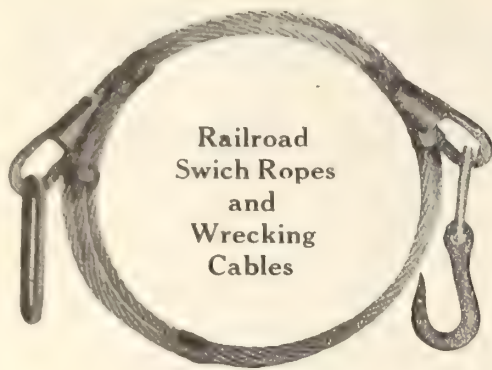
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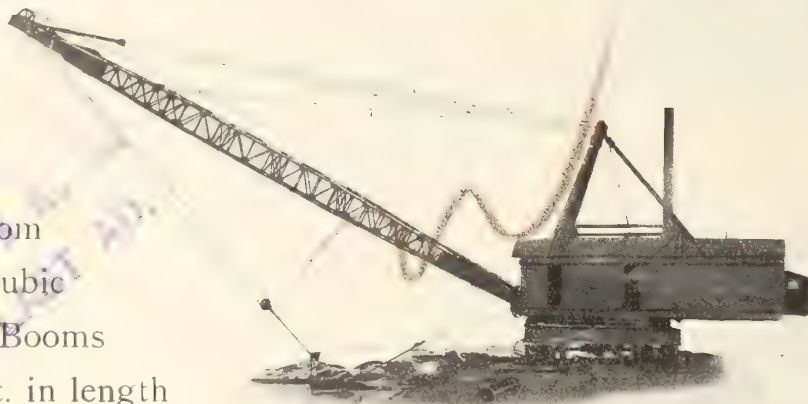
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Those contemplating a trip of any nature should consult Canadian Pacific Ticket Agent, who will be pleased to quote rates, arrange reservations and attend to all details in connection with your trip ; or write

**M. G. MURPHY**

**District Passenger Agent**

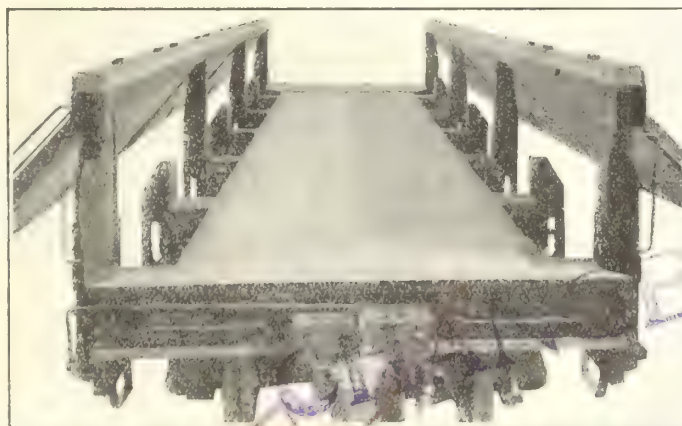
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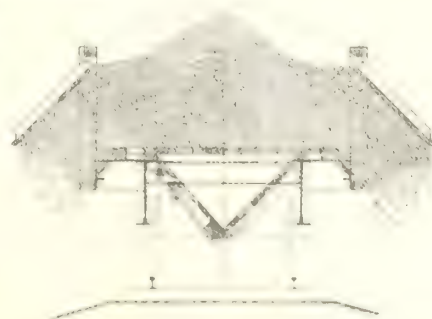
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**Modern Equipment**

The Grand Trunk System reaches all trade centres in Eastern Canada, and is now a large factor in Western Canada traffic through the Grand Trunk Pacific Railway, recently completed to the Pacific coast.

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Unscientific "dope" compounds, ineffective and often harmful, have caused steam users endless annoyance and trouble.

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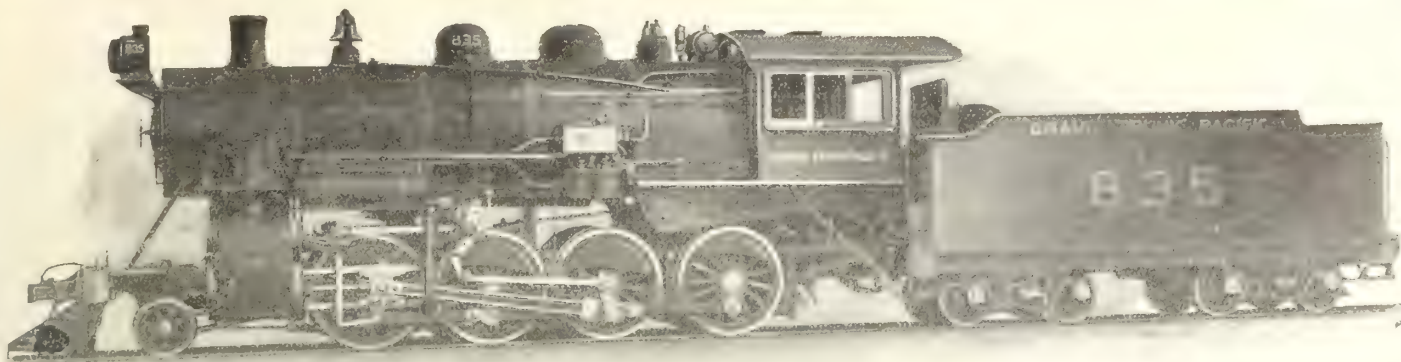


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The damage one broken rail may do, if not discovered in time, makes it of the utmost importance that track be inspected every day, particularly in zero weather.

Any hand or push car equipped with the Fairmont Engine can be run as slowly as three miles per hour. Every inch of track can be as perfectly inspected as by a man on foot.

The Section Foreman with a Fairmont Engine on his hand car enjoys track inspection.

Warmly clothed, he rolls slowly along, free to give his entire attention to close scrutiny of the rail.



The 4 H.P. engine weighs only 225 lbs., and is mounted over one axle, making other end easy to lift around.

Two men can handle the car anywhere. It runs just as well backward as forward.

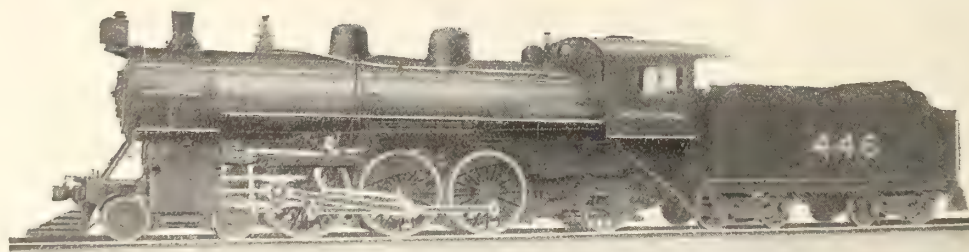
Two men with a good reliable cold-weather motor car such as the Fairmont makes, can do as much winter work as three or four with the old-fashioned hand car.

The small installments on which these engines and cars are sold make it easier to own one than to do without it. Write for catalogue of new 4, 6 and 8 H.P. models.

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Total weight of engine, 243,600 pounds; weight on drivers, 154,000 pounds; diameter of drivers, 73 inches; boiler pressure, 180 pounds; cylinders,  $23\frac{1}{2}$  x 28 inches; maximum tractive power, 32,400 pounds.

On a 185 mile run at an average speed of 40 miles per hour, these new Pacific type locomotives handle 10 cars and consume 12,884 pounds of coal and 9,750 gallons of water per trip.

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DOMINION EXPRESS BUILDING, MONTREAL, CANADA



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## LIMITED



MANUFACTURERS OF

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Country in Six  
Provinces.

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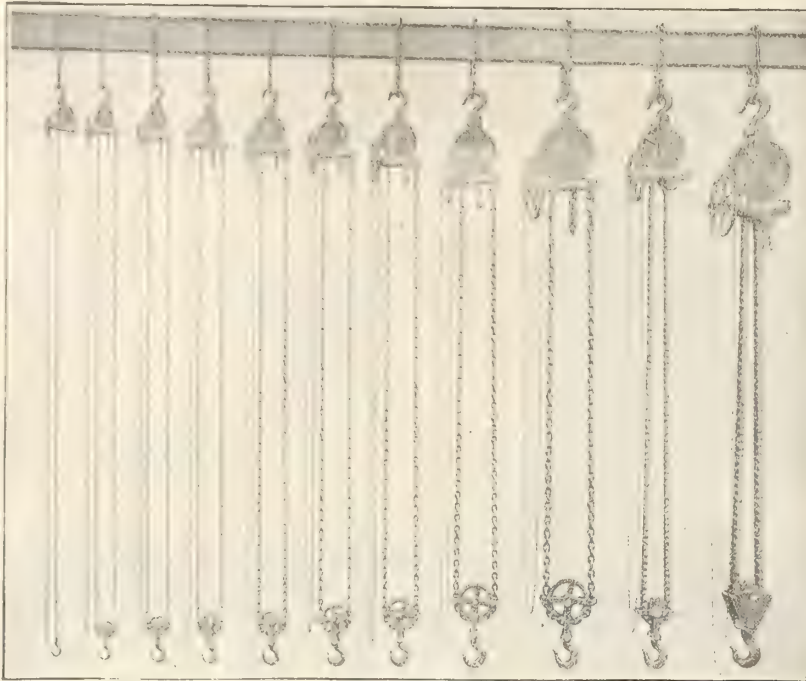
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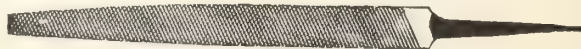
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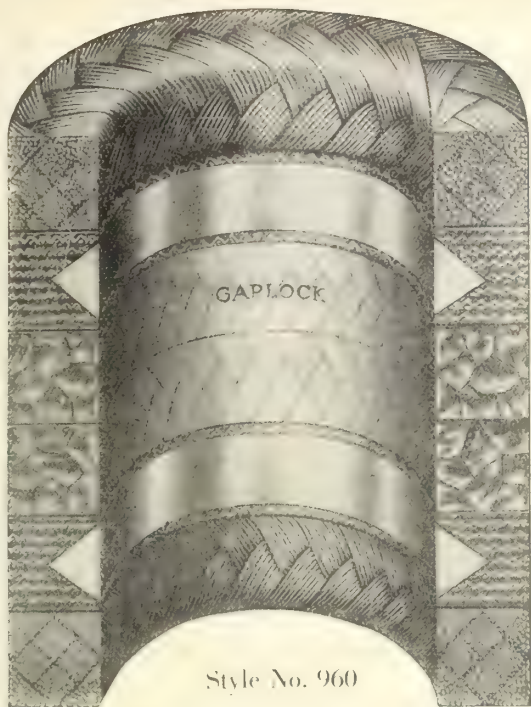
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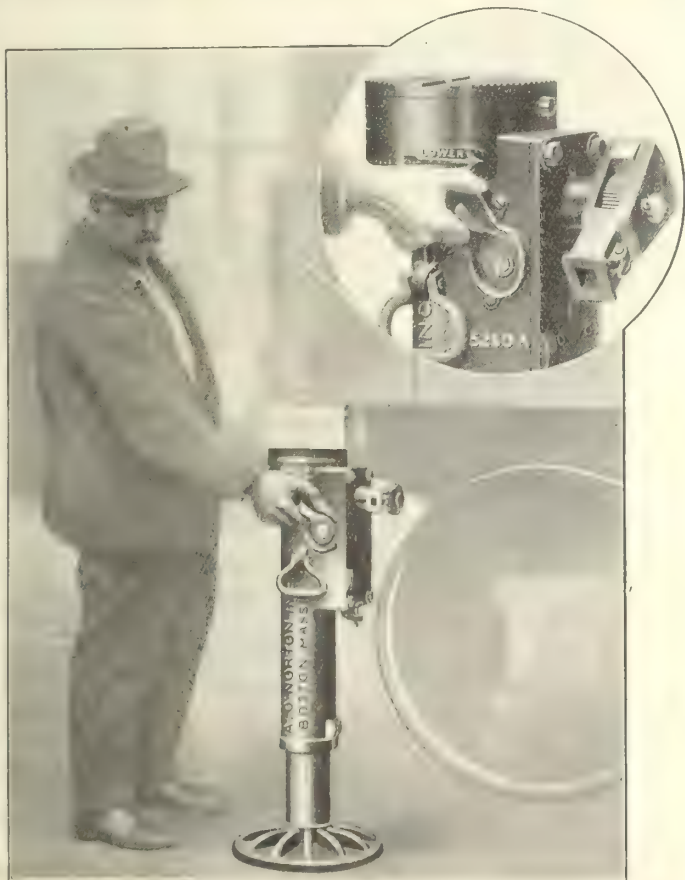
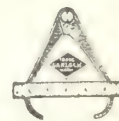
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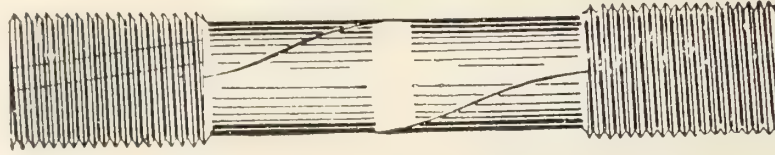
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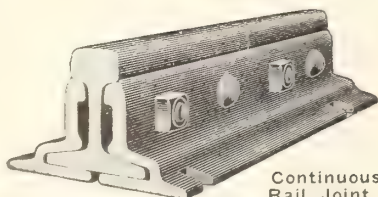
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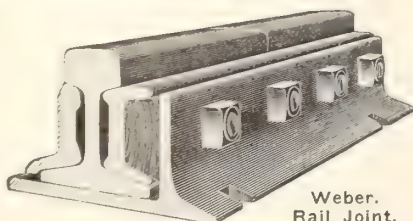
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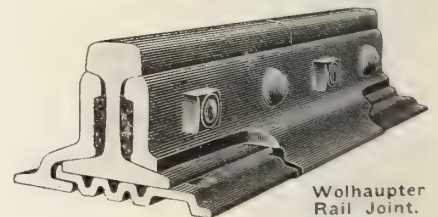


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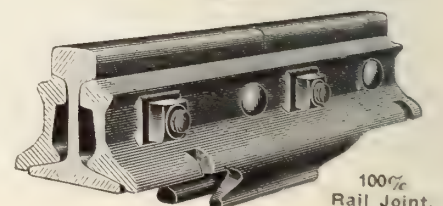
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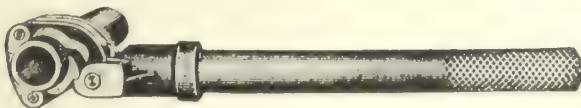
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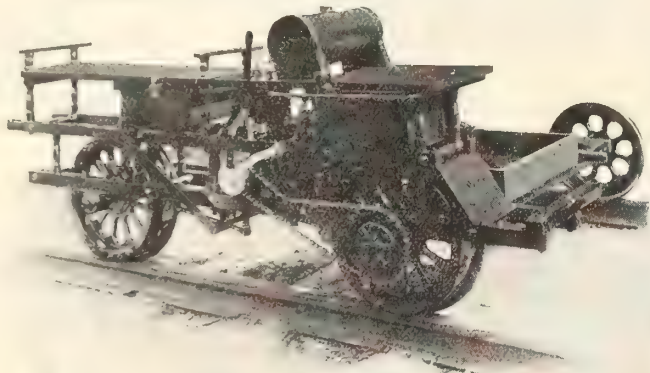
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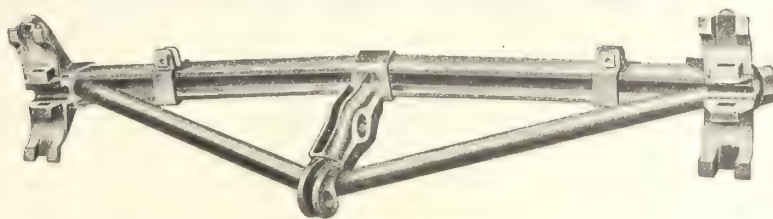


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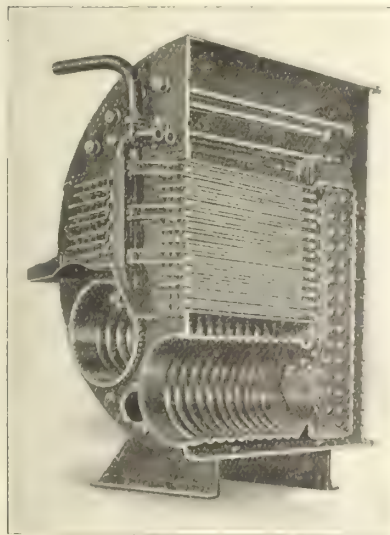
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# Canadian Railway and Marine World

February, 1915.

## Some Maximums and Minimums in Train Operation.

By Alfred Price, Assistant General Manager, Eastern Lines, Canadian Pacific Railway.

It has become a trite saying that a railway company has nothing to sell except transportation, but in order to sell its sole commodity, it must have an ample supply available at all times, and to do so must buy a variety of materials. During the past ten years every item it uses in construction and in the operation and maintenance of its property has increased in price. For example: steel rails, telegraph poles, car sills and lumber have increased by amounts varying from 29% to 54%, while the wages of its enginemen, trainmen, yardmen, telegraphers and maintenance of way employes have increased from 19% to 79%, an increase in all its purchases, including labor, of approximately 35%.

If a commercial institution had to face the problems of securing sufficient additional revenue to offset such tremendously heavy increases in the cost of its raw material and its labor, it would adopt the simple, and natural expediency of increasing the price of its product, so that the consumer would ultimately pay the piper. But although a railway is a business conducted under much the same conditions as a manufactory, having many similar problems and difficulties, it does not enjoy the privilege of increasing its rates. In proof of this statement the following table, showing the earnings on all Canadian railways during the past seven years, is submitted. The units are, one passenger carried one mile—the passenger mile; and one ton carried one mile—the ton mile:

Year	Passenger mile cents	Ton mile cents
1907	1.911	.815
1908	1.920	.723
1909	1.921	.727
1910	1.866	.739
1911	1.944	.777
1912	1.943	.757
1913	1.973	.758

Since 1907, therefore, the earnings per passenger per 100 miles shows an increase of 6c., and per ton of freight per 100 miles a decrease of 5½c. But the ton mile units for 1914 were 23 billions, and the passenger mile units only 3 billions, so that the figures actually represent a very serious decrease in earnings. To be more specific, had the passenger mile and ton mile earnings of 1907 been applied to the 1913 traffic, the railways would have shown an increase in their net earnings of over \$11,000,000.

But, compared to a commercial enterprise, the railway has other handicaps; it cannot, like a manufactory, for instance, close down its plant in dull times and wait until there is a demand for its product, nor can it warehouse its product, holding for higher prices. The public demands that an ample supply of transportation be kept on hand at all times whether required or not; that the railway company be prepared to take care of the peak load whenever an unusual demand occurs, and that the service be efficient. These demands may, or may not, be reasonable, but in any event the railway company must comply with them. In view of these demands and the constantly increasing cost of everything the railway has to buy, and the stationary, or decreasing, cost of every-

thing it has to sell, it is absolutely necessary that the strictest economy, consistent with efficiency, be practiced, and that intelligent, scientific methods of operation be adopted.

Unfortunately, the existing lines and facilities are not likely to be taxed to handle the traffic for some time to come. It would be folly, therefore, to advocate the lowering of transportation costs by reducing grades, eliminating curves, or building better operating facilities. Instead, it is desired to suggest that, under existing conditions, there are opportunities to reduce the operating expenses, for it will be freely admitted that there is a wide field for economy on Canadian railways without any impairment of efficiency.

The operating official naturally desires to provide a service as satisfactory as can be

tract. The railways are almost entirely responsible for this loss. The waste can be stopped by the adoption of up to date methods and insistence upon the exercise of greater care on the part of agents, billers, checkers, porters and trainmen.

For clearing wrecks and satisfying claimants on account of injuries Canadian railways paid out last year over \$1,500,000. There were no less than 710 people killed by the movement of trains, besides 2,966 injured. It is quite true that almost half of those killed were trespassers, and we are likely to continue to have a harvest of deaths from this cause every year until there is a law making trespassing a criminal offense, and a severe penalty is imposed for a violation. Most of the other fatalities and injuries might have been avoided by the exercise of ordinary care. What is needed more than anything else is increased safety in railway operation. One dislikes to speak of the loss in dollars and cents in the face of the awful loss of life and limb as a result of these accidents. The figures quoted tell their own pitiful tale in terms needing no emphasis. The safety first campaign is doing a grand work, and is entitled to the sympathy and active help of every railway officer and employee.

The largest single operating item is the fuel bill. It amounted to \$28,000,000 last year on Canadian railways. For every locomotive mile run there was consumed 113 lbs. of coal for which was paid 17¼c. It is conceded that in order to secure the maximum tonnage with the minimum consumption everybody having to do with the running of trains must co-operate. The fireman alone might save a considerable sum of money. He now puts 11 scoopsful of coal into the firebox per mile run. If he could manage to get it down to 10 the net earnings of the railways would increase by \$2,500,000. The question is, "Would he do it if it was his own coal?" But it must not be left to the fireman alone. Coal can be saved by the locomotive man, the locomotive foreman and his staff, the yardmaster and his staff, train despatchers, operators, trainmen, and, in fact, by everyone from the superintendent to the callboy.

It does not pay to run trains at high speeds, for aside from the greater liability to accident, and the relatively greater amount of damage and loss when an accident occurs, the service is expensive. Because of keen competition in certain territories, it would appear to be necessary to schedule some fast passenger trains, but when and where possible the actual running speed should not exceed from 45 to 50 miles an hour.

Last year the average number of passengers per train on Canadian railways was only 62, and the average number of cars was 5.6. The minimum tonnage per passenger train mile should be handled. On the other hand, and for obvious reasons in freight service, the maximum tonnage per train mile should be handled, and all way freights should be scheduled slow enough to enable locomotives to pull their full tonnage under normal weather conditions. It is significant that the Interstate Commerce



19258 Alfred Price,  
Assistant General Manager, Eastern Lines,  
Canadian Pacific Railway.

reasonably expected by the public, and at the minimum cost. Efficiency and economy might well be adopted as his slogan, the maximum efficiency at the minimum cost. If he can handle the freight without damaging, or losing it, he will take a long step towards efficiency, and, at the same time, will accomplish something worth while under the head of economy. Last year the freight loss and damage account of Canadian railways amounted to over \$2,000,000, double the amount paid out in 1911. The shipper wants the goods delivered to the consignee intact, and would gladly waive the \$2,000,000 he now receives to have this done. This sum, therefore, may be regarded as a penalty imposed upon the railway for nonfulfilment of an obligation or con-



Commission has advised the American railways to lengthen the time of their fast freight train schedules in order to enable them to lessen their operating expenses.

There is an economical load for a locomotive. What that load is can be determined only by experience and by a series of tests. The maximum tonnage may not be an economical load, especially on what is known as a low grade line. A locomotive given the maximum tonnage which it is capable of hauling on a line with grades of 4-10% of 1%, or less, would run into overtime, the fuel consumption would be excessive and it would probably be found that the last straw, speaking metaphorically, had broken the back of the locomotive camel. On the other hand, to underload locomotives in through freight service in both directions is an inexcusable waste.

When, by tests made with a dynamometer car, it has been determined what tonnage a locomotive of a certain tractive power is capable of hauling economically over the maximum grades on a subdivision, operating officials should insist upon locomotives being so loaded, at least in one direction, and under normal weather conditions. Low temperature, a heavy fall of snow, a greasy rail, or any atmospheric condition that will retard the movement of a train will warrant running with a reduced tonnage, so as to permit reasonably good time being made from the initial to the objective terminal. It does not pay to haul maximum tonnage at the expense of excessive fuel consumption and overtime.

Theoretically, locomotives should be given their full tonnage rating in both directions, but in practice it is found that this cannot be done, as usually there is a preponderance of traffic one way, and locomotives must run in the opposite direction with reduced tonnage in order to keep the freight moving. However, under the circumstances, if locomotives haul the maximum load in one direction, the results should be satisfactory.

It might be well to demonstrate the effect of running trains with greatly reduced tonnage. The following statement makes a comparison of actual results on a certain subdivision, the period A and B representing two summer months. During B the gross tonnage handled one mile was 87,008,449, and items indicated by X in A are based on this ton mileage:

Item	Period A	Period B
Average weight of train per mile	1,737 tons	2,133 tons
Train miles	50,136 x	40,876
Pounds coal used per train mile	129	128
Pounds coal per thousand tons hauled one mile	75	61
Cost	\$22,893.55x	\$18,637.98
Saving		\$ 4,255.57

The saving on this 125 mile subdivision was not due to any change in the physical characteristics of the road nor to the use of more powerful locomotive, but merely to a better loading of trains, and during the month the saving amounted to \$4,255.57.

It will be observed that, although the average weight of train per mile during period B was 396 tons more than during A, the amount of coal consumed per train mile was approximately the same. This will not always follow, but the statement demonstrates clearly that if a locomotive is not overloaded, it will burn almost as much coal per mile when hauling 75% or 80% of its full tonnage as when it is loaded to its capacity. The same is true of wages and other engine and train supplies.

It is surprising the effect upon almost every operating item a small increase in the average load per loaded car would have. During 1913 the average weight of contents in loaded cars on all Canadian railways was 19 tons—a very small load when it is considered that the average carrying capacity

was 32.14 tons. An increase in the average contents would result in a decrease in the number of cars required to carry the same volume of traffic, and fewer cars would lessen the cost of locomotives, train, yard and round-house service, as well as some other incidental expenses.

There is now a campaign on to increase the average weight of contents of loaded cars on the Eastern lines of the C.P.R. in 1915, the increase aimed at being 3 tons a car. Based upon the traffic handled in 1913, when the average weight of the contents of loaded cars was 20.15 tons, it is estimated that the increased average load would represent a saving in three items alone of not less than \$800,000, as follows:

In locomotive and round house expenses	\$ 99,608.50
In car repairs	282,367.65
In ton mileage	427,502.60
Total	\$809,478.75

The question might well be asked: Is it possible to secure the additional tonnage? It cannot be done without the hearty and intelligent co-operation of the officers of the railway company and its employees, with the shippers and consignees; but there are many ways in which to increase the average load: only a few need, however be mentioned:

Select cars of large capacity for heavy freight. For 100,000 bush. of wheat, if 80,000 lb capacity cars were used, the cars would be loaded up to 88,000 lbs., and the whole shipment would be carried in 68 cars. To make the shipment in 60,000 lb capacity cars the cars would carry only 66,000 lbs. each and 91 cars would be used. In the former case the average weight of contents would be 44 tons, and in the latter only 33 tons. By using large cars the figures would be: Contents, 3,000 tons; tare, 1,274 tons; total, 4,274 tons. By using small cars the figures would be: Contents, 3,000 tons; tare, 1,558 tons; total, 4,558 tons. Therefore, under the second proposition, in addition to supplying grain door, switching, inspecting and hauling 23 extra cars, the locomotives would have to haul 284 additional tons of dead weight from the point of shipment to destination and back again.

Select smaller capacity cars for light and bulky freight. As the smaller capacity cars are approximately the same dimensions as the larger, and weigh 2 tons less, they are just as suitable for hay, furniture, oats, etc., and for such commodities it is profitable to use them.

Consignees who need but one car of freight at a time usually order the minimum car load, as per the freight classification. If the matter was properly represented to them, they might be induced to order in larger units.

When a shipper holds an order for several car loads of freight for the same consignee and destination, it should not be a difficult matter to persuade him to load the full order in the minimum number of cars.

Shippers and consignees who have suffered through car shortages in the past can be shown that the simplest way to prevent a recurrence of such a condition is by loading all cars to their full capacity. Not only will this plan avoid car shortages for a number of years to come, but it will prevent the congesting of terminals, which has also been the cause of a great deal of trouble to shippers and consignees in past years.

Another way to secure the maximum freight tonnage to the minimum tare and in the minimum number of cars is by avoiding the unnecessary movement of empty cars.

When the settlement for the use of foreign cars was on a mileage instead of a per diem basis, the principle that empties should be run in only one direction, and that op-

posite to the direction of the preponderance of traffic, was pretty generally adhered to. A cross movement of empties was then looked upon as exceedingly bad transportation. Since the change in the system, the penalty for holding foreign cars has been so heavy (at present 45c. per day) that under most circumstances it pays to send foreign cars home empty, even when to do so they must travel in the direction of traffic.

The necessity of moving foreign empties homeward promptly has, probably, had a tendency to weaken the hold which the transportation officer a few years ago had upon the principle of moving empties in one direction only. The principle, however, is as sound today as ever it was, but it is conceded that, under the changed conditions, it must often be departed from.

The direction in which empties should move is naturally that opposite to the movement of the preponderance of traffic. The cost in that direction is comparatively small, because the locomotives returning for loads are light enough to handle them and no additional locomotive mileage is necessary. When, however, empties are moved in the same direction as the balance of traffic, additional locomotive mileage is involved—but not only so, for the empties are being sent out of a territory where they are in demand, and for every such movement, an empty must be hauled in the opposite direction to take its place, except for cars of special classes and for which there is no suitable commodity.

A conservative estimate of the cost of hauling empty cars is 1½c. per car mile. If, therefore, an empty suitable for traffic is sent in the direction of the balance of tonnage, a distance of 300 miles, the total additional mileage involved is 600 miles at a cost of \$9—a sum well worth trying to save.

During last year 24% of the car mileage on Canadian railways was empty. If by some means this percentage could be reduced to say 20% it would represent a large increase in the net earnings of our railways.

### Reported Settlement of Detroit River Tunnel, Michigan Central Railroad.

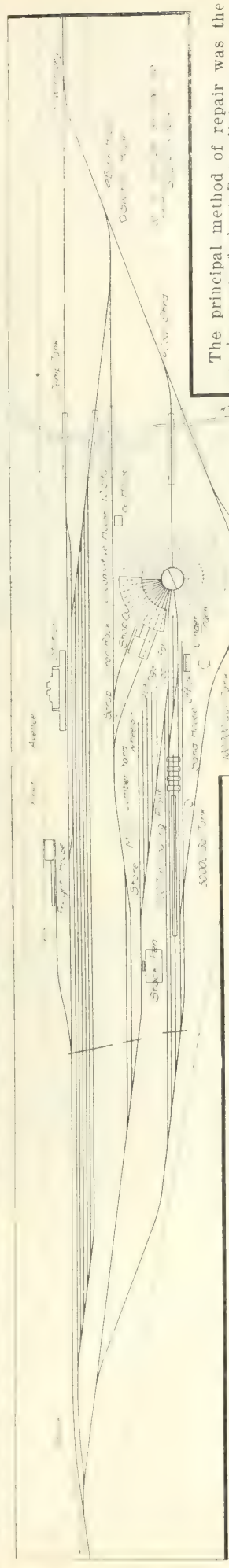
A rumor came to our attention recently that the M. C. R. tunnel under the Detroit River was showing evidences of settlement. This tunnel is a structure of concrete of rectangular cross section and was built by floating successive steel caissons into position and filling in around them with concrete deposited under water. There would seem to be no reason why a tunnel of this type should be more liable to settlement than a circular tube tunnel, such as that under the St. Clair River, which is driven through clay very similar to that in which the Detroit tunnel lies.

We find upon inquiry that some settlement did take place during the construction of the Detroit tunnel before it was opened to traffic, and was found to be due to a enormous additional load upon the under side of the tunnel and thereby placed small amount of leakage coming through the floor of the tunnel. This had the effect of relieving the hydrostatic pressure on the foundation soil underlying the tunnel. Measures were at once taken to stop the leakage through the tunnel floor, and when this was done the settlement stopped. There has been no ascertainable settlement since the tunnel was opened to the operation of trains; and the small amount of water which seeps into the tunnel is steadily decreasing, due probably to the gradual stoppage of the pores in the concrete by particles of silt.—Engineering News.



Divisional Facilities on the Grand Trunk Pacific Railway.

The accompanying plan shows the G.T.P.R. divisional yards at McBride, B.C., which are typical of the facilities which are being provided at other points along the portion of the line now under construction. These facilities are being constructed at Prince George, Endako, Smithers and Pacific, and



Grand Trunk Pacific Railway Divisional Yards at McBride, B.C. Typical of the Several on the Line.

are duplicates of the McBride layout, with the exception of at the last two points, where the locomotive houses will be curtailed in so far as the extent of the machine shop is concerned, and the boiler capacity will be reduced. The McBride installation is complete, and the others are under way.

In the McBride layout the terminal plans call for a 12 stall locomotive house, with a machine shop to the rear. The locomotive house will be heated by hot air, from a fan house midway in the outer wall. As contemplated, the final capacity of the locomotive houses will be 48 stalls, in four 12 stall sections, each section with its own heating fan arrangement. In the McBride installation there is a 1,000 ton coaling plant, which it is the intention to eventually replace with an oil fuel station. The other four points are being equipped with oil fuel stations, each of which will contain a 350,000 imperial gallon storage tank, with provision for extension to include two other similar tanks. There will also be a service tank, under which will be located pumps, which will take the oil directly from a sump into which the tank cars drain, and deliver it either to the service tank or the storage tank. These tanks will be provided with heating coils, measuring apparatus, etc., supplied with steam from the locomotive house boilers. Each of the five points will have a 100,000 gallon steel water tank, and a 50,000 gallon steel service tank.

The initial layout in these yards will only have repair tracks near the locomotive house for car repairs, but it is the intention in the future to add a planing mill and store and a car bin for repair parts, and, as well as additional shop buildings as shown.

Opposite the locomotive house there will

minor facilities such as are required at these points. We are indebted to H. A. Woods, M. Can. Soc. C.E., Assistant Chief Engineer, Grand Trunk Pacific Ry., for the information on which this article is based.

Canadian Pacific Railway Double Track and Alternative Routes.

The C.P.R. has in operation 1,445.35 miles of double track line, and it has also in operation 525.20 miles of track which give alternative routes to the previously existing lines. The following table shows the location and mileage of the sections of double tracked lines:

Eastern Division:—	Miles.
Montreal (Windor St.)—Smiths Falls Yard	120.18
Montreal West—Brigham Jet	44.72
Montreal West—Mile End	7.19
Montreal (Place Viger) — Ste. Therese Terminals (additional mileage)	20.11
Montreal Terminals	0.71
Ontario Division:—	
Smiths Falls—Glen Tay Junction of Lake Ontario Shore Line (near Agincourt)—Toronto	14.87
Toronto—Guelph Jet	13.40
Toronto (Bathurst St. Jet—Hamilton	39.20
North Toronto line	23.07
London terminals	3.97
Wind or terminals	1.41
Lake Superior Division:—	
Rainbow Jet, Sudbury	0.36
Azilda—Kenora	6.80
Roberts—Woman River	25.00
Nemegos—Esher	30.00
Healy—Barkow	25.60
Healy—King Peninsula	19.10
Healy—Pays Plat	27.10
Salem, Gurney	8.40
Covers	13.60
Gurney	11.00

as to render the rails useless by spiralling. In the hasty repair of bridges, the engineers were materially assisted by the small flow of water in the dry season, and in consequence it was possible frequently to throw across shorter bridges at a lower level than the permanent structure, on a low level deviation, the permanent line taking the higher level on account of the high water in the rainy season.

Fire Hill, Ruby	4.00
Nayahus, Port Arthur	7.90
Manitoba Division:—	
Port Arthur—Jolson	386.06
Winnipeg terminals	9.20
Whitehead—Broadview	180.00
Saskatchewan Division:—	
Broadview—Grenfell	14.60
Indian Head—Swift Current	16.00
Alberta Division:—	
Swift Current—Java	191.20
Calgary terminals	6.00
	6.20
	12.20

The principal method of repair was the employment of short Bates link trusses, up to lengths of 25 ft., spanning between cross-tie piers or trestle bents. The link trusses were provided from the military base in quantities, for repair purposes, and would fit into a great many places. The ties used were standard for the South African Railways, of Jarrah wood or teak, with 5 by 10 in. section, accurately sawn, so that when built up in bird cage form they made a solid pier. Most of the temporary piers were thoroughly bedded on the ground level, the soil being hard, but in some instances, where trouble was anticipated from washouts concrete foundations were placed, to which the ties were anchored. Where the pier height was great, triple cribs of ties were in some instances used, the three cribs being tied together, at about every fifteenth course, with cross rails.

**The Railways and City Smoke Bylaws.**—Judgment was delivered recently in Toronto, on a motion on behalf of the C.P.R. to quash a conviction for allowing smoke to issue from its locomotive house there, contrary to the city bylaw. In giving his judgment, the judge said:—"If the railway is subject to the operation of the bylaw in question, the magistrate could convict on the evidence before him, but I am of the opinion that the railway in its operation is not subject to the municipal bylaw, but is subject to the Dominion Railway Board's regulations. The conviction will therefore be quashed without costs and with protection to the magistrate."

**Assuming fuel oil and coal to cost the same on the B.C. basis, there is said to be a saving in favor of the former of about 25% due to the lesser volume of air required, which, in the case of coal, carries a large amount of heat out of the stack with it.**

Repairing Bridges in the South African War.

A. F. Stewart, M.Can.Soc.C.E., Chief Engineer, Mackenzie, Mann & Co., Ltd., Toronto, gave an address on this subject recently to the Canadian Society of Civil Engineers, Toronto branch, of which he is Chairman. Some of the points brought out demonstrating the resourcefulness of the engineers conducting the repairs, would prove of great value to construction men. The Boers had four methods of interrupting communication on the railways with the object of impeding the British advance: Blowing up bridges, blowing up the rail joints on a section of line, blowing up trains, and turning over sections of line, so

British Columbia Division:—	
Fort Good — Kamloops	25.50
Revelstoke—Tatla	24.40
Kamloops—Tranquille	8.00
Ruby Creek—Vancouver	81.10
	139.00
	1,445.35
Following are the location and mileage of the alternative routes:—	
Ontario Division:—	
Glen Tay and mileage 87.4 Peterboro	181.10
Subdivision	
Manitoba Division:—	
Molson and Winnipeg terminals	36.70
Winnipeg and Winnipeg	36.60
Alberta Division:—	
Java and Bassano	229.80
Gleichen and Shepard	41.00
	555.20



### Mountain Type Locomotives, Canadian Pacific Railway.

The C.P.R. has built recently at its Angus shops, Montreal, 2 Mountain type locomotives, the first to be used in Canada. This type was first introduced on the Chesapeake and Ohio Ry. in 1911, and as it was especially designed for high speed passenger service over mountainous divisions, the same now used naturally followed. In detail design these new C.P.R. locomotives follow C.P.R. standard practice as far as possible, and the cylinders, pistons, piston rods, piston valves, cylinder heads, steam chest covers, boxes, axles, and other details are interchangeable with the more recent

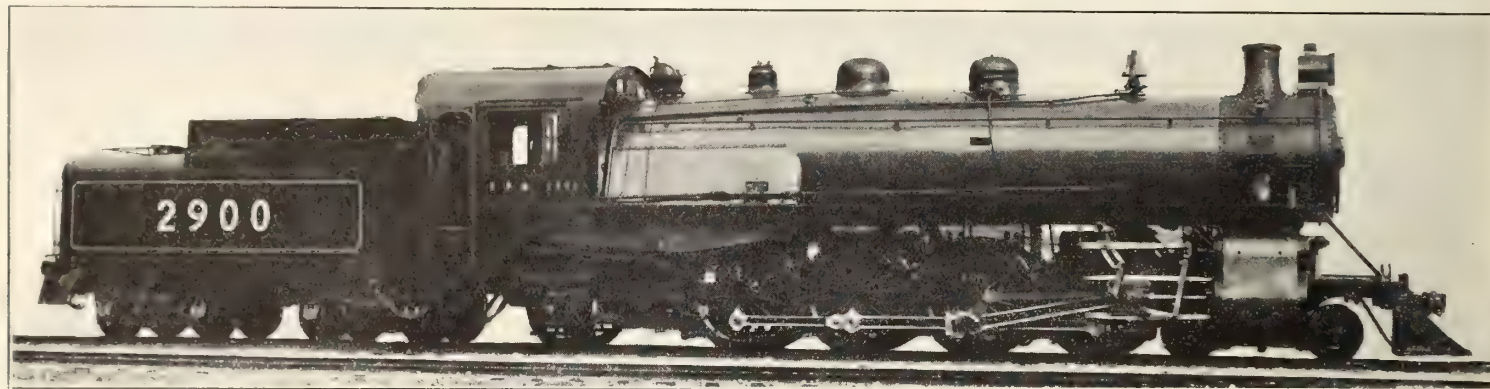
Railway and Marine World, June, 1912, and have the latest design of screw reverse gear.

### Canadian Northern Railway Terminals at Port Mann.

Canadian Railway and Marine World for March, 1914, contained a description and plans of the terminal facilities planned by the C.N.R. at Port Mann, B.C., part of which were then under way. While the scheme as outlined there provided for an extensive terminal, sufficient to meet all requirements of the line for some years to come, the intention was to merely build a portion of the facilities, adding thereto according to a prearranged scheme as required.

South of the locomotive house there have been erected two buildings for the men, a dining hall and bunk house. The dining hall is 86 by 31 ft., two stories high, with a seating accommodation on the lower floor for 200 men. The upper floor is laid out for 13 bedrooms, with lavatory accommodation, and a sitting room at one end. The bunk house, 92 x 31 ft., is similar in construction to the dining room, with 13 bed rooms upstairs and 13 downstairs, and lavatory accommodation and sitting room on both floors. These two buildings have been used by the construction men, but will be turned over to the operating department for the shop and road men.

About \$20,000 has been spent in laying out good roads from the shop site to Bon Accord



Mountain Type Locomotive, Canadian Pacific Railway.

consolidations and the mikados, classes P1 and N1, over 200 of each of which are in service. Following are the principal dimensions:

Type .....	4-8-2
Sub class .....	H1a
Boiler pressure .....	200 lbs.
Firebox width, inside .....	88 7/8 ins.
Firebox length, inside .....	161 1/2 ins.
Tubes, number and outside diameter .....	210—2 1/4 ins.
Flues, number and outside diameter .....	30—5 1/4 ins.

A 10 stall section of the proposed 43 stall locomotive house has been completed, and is in use, and for it certain facilities, such as coaling plant, ash pits, etc., have been built, including an 80,000 gal. steel tank. The locomotive house stores building has also been completed. This consists of a single story and basement structure, 83 1/2 x 30 ft., with an 8 ft. platform along three sides, with a platform 30 ft. long along the fourth side for outside storage. This is

Road, which runs through what will eventually be the main business section of Port Mann. About \$350,000 has been expended in and around the shop area. We are indebted to J. Montgomery, of the Imperial Construction Co., which had the contract for this work, for the information contained in the foregoing, and to T. H. White, M. Can. Soc. C.E., Chief Engineer, Canadian Northern Pacific Ry., for the photograph from which the illustration was made.



Canadian Northern Railway Terminals at Port Mann.

A.—12 stall locomotive machine shop; B.—10 stall locomotive house; C.—dining hall and bunk house; D.—store house; E.—80,000 gal. steel tank.

Length over tube sheets .....	20 ft. 8 1/2 ins.
Superheater, type .....	Vaughan-Horsey
Superheater tubes, number and outside diameter .....	120—1 1/4 ins.
Superheater tubes, average length .....	19 ft. 4 1/2 ins.
Superheating surface .....	760 sq. ft.
Firebox heating surface .....	299 sq. ft.
Tube heating surface .....	3,414 sq. ft.
Equivalent heating surface .....	4,853 sq. ft.
Grate area .....	59.6 sq. ft.
Cylinders .....	23 1/2 by 32 ins.

One of the main features of the design is the style of firebox adopted, which is 13 ft. 5 3/8 ins. long by 7 ft. 6 7/8 ins. wide, fitted with a Gaines combustion chamber and arch, and having a 59.6 sq. ft. grate area. The locomotives are equipped with the Vaughan-Horsey superheater, and the vestibule cab, which was described in Canadian

served by a spur track from the main line, which also serves the boiler house addition to the locomotive house, over which coal is supplied.

A section of the locomotive repair shop, 277 1/2 x 145 ft. has been completed, to the southern end of which a future addition will be made, increasing the size to 600 x 145 ft. when required. This shop is of a mill design, consisting of two bays, with a central row of cast iron columns, and a low gallery along one side of one of the bays, about half the width of the bay. This shop is due west of the locomotive house, and separated from it by a track storage space and 80 ft. transfer table, which is completed to serve the 12 shop tracks.

### Bending Copper Pipes.

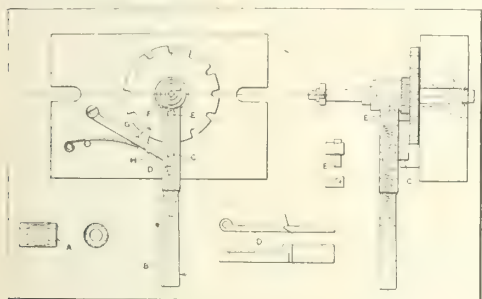
Bending copper pipes, as ordinarily effected by plugging up one end, filling it with melted resin, and then, after bending, melting out the resin again, is troublesome and expensive. The substitution of sand for resin is sometimes practised as an improvement on the resin, as regards the time that it takes. There is a much better way, which leaves the pipes much more truly circular in cross section at the bends. It consists of taking a spiral of wire, preferably of square section, of a diameter slightly greater than the bore of the pipe to be bent. One end of the spiral has a squared shank to permit of the application of an ordinary car-



penter's brace. By means of the latter, the spiral is inserted inside the pipe completely, by turning the brace in the direction of the spiral, so as to slightly diminish the diameter of the spiral; on the discontinuance of the turning the spiral springs to the full inside diameter of the pipe. The pipe may then be bent as though it were a lead rod, after which, by reversing the rotation of the brace, the spiral may be withdrawn from the tube. Curves of any degree of complication may thus be made without any flattening at the bends; the only limit of sharpness of curvature is that imposed by the quality of the metal being bent. Curves in all three planes may be made.—Shop Kinks, by R. Grimshaw.

### Quick Shifting Indexing Fixture.

The accompanying illustration shows a quick shifting indexing fixture, which is used on a milling machine for milling ratchet teeth of the form shown at A in the illustration. The blank is held on the fixture by means of a screw and slotted washer, the arrangement of which is clearly shown in the side view. The operation is as follows: The handle B is moved in the direction of the arrow, causing the pin C at the end of the oblong slot in the handle to force the pawl D out of its slot in the dial. As soon as the pawl is out of the slot, the V shaped pin E, which is kept engaged with the ratchet F by a spring, will cause the shaft to which the dial is keyed to revolve. When the pin C has reached the point G, it will release the pawl, which is then thrown back into contact with the dial by a spring. As the dial continues to revolve,



Quick Shifting Indexing Fixture.

the pawl will drop into the next slot and locate the work for milling the next tooth.

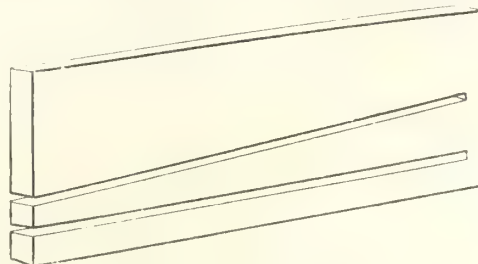
In returning the handle, the pin C will travel on the opposite side of the pawl, and when left in the curve H the spring behind the pin will hold the pawl D securely in the slot in the dial. The spring behind pin E is made just stiff enough to keep the pin from slipping when the pawl is out of a slot in the dial. The teeth in the ratchet F were cut with an ordinary thread cutter. This fixture is used on a hand miller, and the teeth in the blank are cut with an ordinary angular cutter. This system of shifting could easily be applied to a horizontal attachment, and by substituting a centre for the stud and inserting a ball thrust bearing, it could be used instead of an index head where quick shifting is desirable. For those classes of work for which it is adapted, a fixture of this kind enables a very satisfactory rate of production to be attained.—Machinery, New York.

### Block Signaling on the Intercolonial Ry.—

The block signaling system, which is being installed on the I.R.C., has been completed between Nelson Jct. and Newcastle, N.B., and was placed in operation Jan. 10. The system is already in operation between Halifax and Windsor Jct., St. John and Hampton, and Moncton and Painsec Jct.

### Milling Out Keys.

About as cheap a way of making keys in quantity, or even when only a few are needed, is to mill them out of a slab, as shown herewith, by means of a cutter, which is practically a thick saw. This insures that the sides, which are at an angle to each other, and which do the work and hence require to be true and well finished, have a perfect surface and regular taper, the lat-

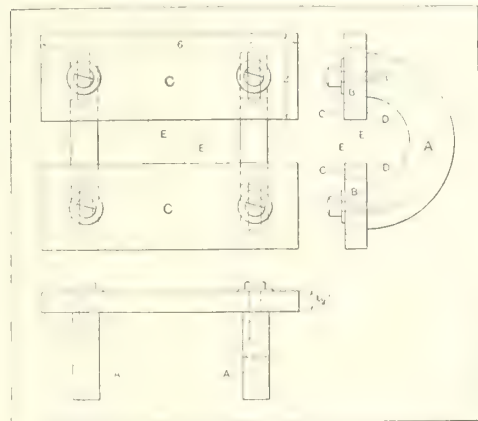


Milling Keys from a Slab.

ter being of whatever degree it is required, which is readily determined by the graduated table of the machine. From one slab, either planed off or milled on the two parallel sides, there may be milled a number of keys, cutting them alternately head and tail, so that the width is properly arranged for, the whole stock may be used up. The accompanying illustration shows a key partially milled out of a slab.—Shop Kinks, by R. Grimshaw.

### Accurate Tapered Plug Gauges.

An accurate tapered plug gauge that has been found of value in grinding work especially, is illustrated herewith. It is made quite heavy to withstand the severe usage it would meet with in the hands of the tool boy, etc. The two yokes A were rough turned from machine steel forgings, and the surfaces B were then ground on a surface grinder to insure having them parallel. The pieces C



Gauge for Measuring Tapered Work.

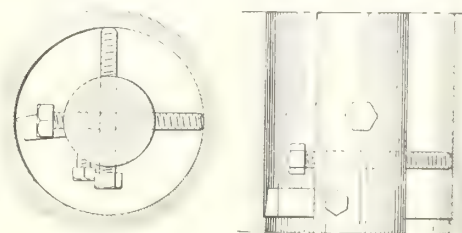
were made of tool steel, hardened, with the surfaces D ground, and the surfaces E ground and lapped. The slots were made 1-16 in. larger than the screws, in order to provide for the required amount of adjustment.

This tool was used for gauging the tapered plugs while grinding, the method of setting forth the proper taper in inches per foot being as follows: A block, made of machine steel, with two holes of accurate diameter and spacing between centres, was used. Assuming that a plug is required with a taper of  $1\frac{1}{4}$  in. per ft. and 1 in. diam. at the large end, it would be necessary to use accurate 11-16 and 1-in. plug gauges in connection with this block. As the centre distance of the holes in the block is exactly 3

ins. it will be evident that the difference in diameter of the plugs should be 5-16 in. to correspond to a taper of  $1\frac{1}{4}$  in. per ft. In setting the gauge shown all that is necessary is to insert the standard plugs in the block, and then set the parallels to engage the protruding ends of the plugs. In case other tapers than  $1\frac{1}{4}$  in. per ft. are required, it would be necessary to make extra plugs with shanks to fit the holes in the block, and with the protruding ends of the proper diameters to correspond with the required taper.—Machinery, New York.

### Tool for Drilling Long Deep Holes.

For drilling long deep holes that do not go clear through the pieces so as to permit the use of a boring bar, a tool having right back of it a set crew that can be set out so as to bear against the side opposite the cutting

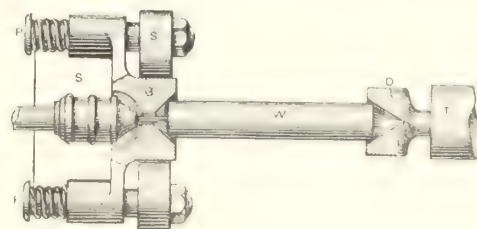


Tool for Drilling Long Deep Holes.

so as to touch the opposite side of the bore, and with a similar set screw midway between the tool and the first mentioned set screw, bearing against the bore hole circumference at a midway point, has been found very effective. Such a tool is shown in the accompanying illustration. One set screw is directly opposite the tool, and the other one midway. The opposite set screw prevents the tool from backing away from the work, and the midway one prevents the tool from springing away from a central position. If the job be such as to permit the hole being bored vertically, there will be no trouble about getting out the borings or having them crowd under either of the set screws, but if the job must be placed horizontally, the tool must be rigged so that one of the screws shall be on top, and the other on the side.—Shop Kinks, by R. Grimshaw.

### Centre Drilling Device.

A centre drilling device for small work, and which is of novel design, is shown in the accompanying illustration, which is a plan view. A frame S is bolted to the lathe shears, close to the headstock, directly be-



Centre Drilling Device.

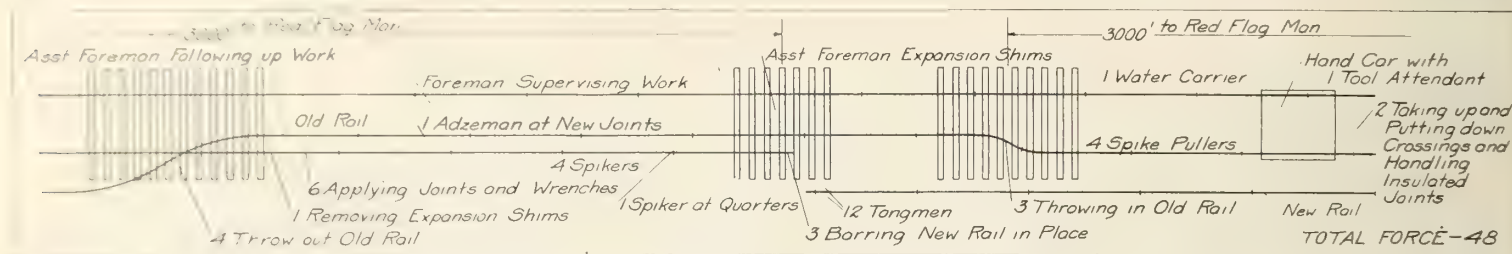
neath the centre drill. This frame carries two pin bolts P, which act as guides for a carriage G, which is normally kept to the right by the coil springs on the pin bolts P. The rear of the carriage G is recessed for drill chuck clearance, with a central hole through which the centre drill passes. The front of the carriage is recessed with a tapered recess, of such a size as to take the largest bars to be centred. The recesses on either side and the drill hole are concentric, and in line with the lathe centres. The



tailstock spindle T carries a centre D of similar design to the tapered recess on the front side of the carriage. When not in use the drill is back in the drill clearance hole. The work W to be centred is placed between the tapered recesses, and by working the tailstock spindle forward, the work is forced on the drill, which drills a centre hole, truly concentric with the work.—Shop Kinks, by R. Grimshaw.

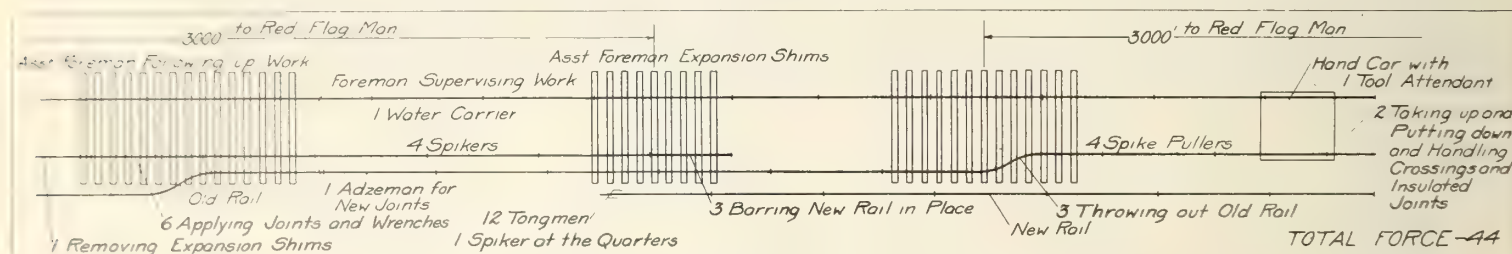
### Handy Eccentric Vise.

A handy eccentric vise for holding narrow flanged pieces that are to be faced on two sides, is shown in the accompanying illus-



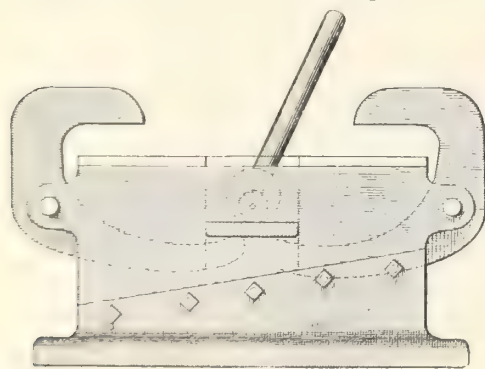
### Efficiency methods. Rail laying from the inside.

The figures in this plan and the one below relate to the number of men, thus:—"6 applying joints and wrenches."



### Efficiency methods. Rail laying from the outside.

tration. The pieces for which the vise was originally made were narrow arched members, with flanges at either end, on which the clamping jaws set, the far and near sides of which were to be finished. It was a job that would ordinarily be done on a milling machine, but as all the milling machines were in use the vise was clamped to the



Handy Eccentric Vise.

carriage of a lathe, and side cutters mounted on an arbor between lathe centres, with the vise containing the work fed across the carriage. It could be used in a variety of ways, and for flanged pipe work, should be most useful in the lathe, planer, boring mill or milling machine. With the clamping eccentrics a positive grip on the flanges of the pieces to be held can be secured. The base of the vise is made in two parts, with the mating surfaces on an incline, to allow for vertical adjustment of the work with regard to the tool.—Shop Kinks, by R. Grimshaw.

## System in Railway Track Work.

By A. M. Clough, Supervisor, New York Central and Hudson River Railroad.

It is just as essential to have proper organization of men in doing track work as it is in many of the departments of an army. The fact that a body of men when dressed alike and when moving in harmony give an added effect to their movement can be worked in several instances in laying rail, or handling ballast, etc., and men can be taught to work with as much regularity and precision as a body of military men on duty.

Take, for instance, in laying rail: The men pulling spikes, 8 or 10 of them, can be taught to pull every eighth or tenth spike,

troublesome and harder to handle than poor cinder or gravel ballasted track. Weeds will grow and it is impossible to cut them, moisture will cause ties to decay and track to heave in winter and instead of having a clean, bright looking track it will look worse than poor cinder or gravel ballast.

A light lift, of from 1½ to 2 ins., should be made if possible, but before anything else is done the stone and dirt from between the ties, for their full length, should be removed to nearly the depth of the tie. This should be put outside on the shoulder.

each pulling their own without the confusion of a poorly organized gang that goes at it haphazard and moves past each other in any old way. The same is true in lifting a rail. Twelve or more men will move forward with clocklike regularity when taught to do so, instead of dragging along haphazard. All the others, wrenchers, spikers, those throwing out the old rail, etc., each is found in his place and knows how to keep it. In fact, it can be worked down to a system that can be outlined or illustrated, as in the accompanying diagrams, and anyone who has never tried it will be surprised at the results when compared with less specific methods.

Another thing very necessary in order to obtain the full benefit, is the foreman's selection of men to fill the different places. Many a man makes a good wrencher who is not as good either in pulling spikes or on the tongs. In the diagrams, the placing of men is based on long experience and study and will not cost anything to be tried by those who heretofore have not worked to a set system.

**Cleaning Stone Ballast and Keeping it Clean.**—This plan should interest every trackman who has charge of stone ballasted track and instead of making it a secondary consideration, sometimes considered a waste of money, it should be considered paramount. Whenever a foot of track is to be repaired, where dirty stone ballast exists, the dirty stone should be removed and when replaced it should be put back with the ballast forks or be cleaned with some other devices made for the purpose.

Stone ballasted track, if permitted to get foul with sparks, cinders or other foreign matter, will become in a short time more

There will still be some sparks and cinders in the ballast left in the track, but this should be loosened up with picks to permit what is left to go down as deep among the stone as possible. A light lift should then be made and any tie renewed that needs to be without disturbing the old bed of the tie taken out. Then tamp up the track with clean stone forked in from the shoulder, loosen up the shoulder with picks and fork over the stone, shovelling out the dirt. Make the shoulder standard with what has been shovelled out and if there is any stone needed to finish the standard dressing, this should be unloaded in the centre of the track from ballast cars. Then you will have track that will look like new ballasted track and will ride smooth and elastic. It will also be good for two years under the heaviest kind of traffic and longer where it is lighter.

When simply cleaning the stone, screens can be used that will throw the stone back where it was shovelled out from, but where track is being given a light lift and ties renewed it is necessary to put the stone outside and then it can be forked back in more economically and just as cleanly as screening it.—Maintenance of Way Bulletin.

**Railway Rates in Australia.** It is stated that on the New South Wales Government Railway an increase has been made recently in passenger fares ranging from 6% on through fares to 14, 25 and 50% on different kinds and classes or reduced excursion fares. An increase of 10% has been made in freight rates also. The advances are for the purpose of enabling the railways to meet the very considerable increase in operating expenses.



## Birthdays of Transportation Men in February.

Many happy returns of the day to:—

B. H. Bennett, General Agent, Chicago and North Western Ry., Toronto, born at Cobourg, Ont., Feb. 6, 1858.

F. L. C. Bond, Division Engineer, Eastern Lines, G.T.R., Montreal, born there Feb. 21, 1877.

C. H. Booth, ex-Local Freight Agent, Midland Ry., of Manitoba, Winnipeg, born at Banff, Scotland, Feb. 16, 1882.

T. Britt, General Fuel Agent, C.P.R., Montreal, born there Feb. 3, 1871.

G. E. Bunting, General Western Freight Agent, Allan Line Steamships, and Manager, Allan and Co., Chicago, Ill., born at Toronto, Feb. 8, 1873.

H. R. Charlton, General Advertising Agent, G.T.R. and G.T.P.R., Montreal, born at St. Johns, Que., Feb. 9, 1866.

R. Colclough, Superintendent, Intercolonial Ry., Levis, Que., born at Bic, Que., Feb. 24, 1871.

F. W. Cooper, A.M. Can. Soc. C.E., Division Engineer, C.P.R., Montreal, born at London, Ont., Feb. 16, 1880.

R. Crawford, Northwest Agent, Northern Navigation Co., Winnipeg, Man., born at Kingston, Ont., Feb. 21, 1870.

A. J. Donegan, Superintendent, Algoma Eastern Ry., Sudbury, Ont., born at Perth, Ont., Feb. 17, 1872.

R. W. Drew, Division Freight Agent, Saskatchewan Division, C.P.R., Regina, born at Kingston, Ont., Feb. 17, 1874.

E. A. Evans, M. Can. Soc. C.E., ex-General Manager and Chief Engineer, Quebec Ry., Light and Power Co., Quebec, born at Kensington, London, England, Feb. 26, 1855.

L. O. Genest, General Storekeeper, Western Lines, C.P.R., Winnipeg, born at St. Henri, Levis County, Que., Feb. 16, 1856.

J. H. Guess, General Purchasing Agent, Grand Trunk Ry., Montreal, born at Raleigh, N.C., Feb. 5, 1878.

J. C. Holden, A.M. Can. Soc. C.E., Division Engineer, C.P.R., Winnipeg, born at St. John, N.B., Feb., 1876.

T. C. Hudson, Division Master Mechanic, Quebec Grand Division, Canadian Northern Ry., Joliette, Que., born at Brockville, Ont., Feb. 20, 1873.

H. Hulatt, Commercial and Traffic Superintendent, G.T. Pacific Ry. Telegraphs, Winnipeg, born in London, Eng., Feb. 15, 1883.

C. Gardiner Johnson, Lloyds' Agent for British Columbia, Vancouver, B.C., born at Dunblane, Scotland, Feb. 8, 1857.

F. C. Johnson, Night Locomotive Foreman, C.P.R., North Transcona, Man., born at Montreal, Feb. 26, 1885.

R. S. Logan, Vice President G.T.R., Montreal, born at St. Louis, Mo., Feb. 13, 1864.

John McCraw, General Agent, Central Vermont Ry., New London, Conn., born at Craigvale, Ont., Feb. 6, 1868.

G. L. McCrea, Local Freight Agent, C.P.R., Vancouver, B.C., born at Springtown, Ont., Feb. 9, 1876.

D. McDonald, District Passenger Agent, Canadian Government Railways, Montreal, born at Ste. Hyacinthe, Que., Feb. 28, 1862.

T. McNabb, ex-Master Mechanic, Alberta Ry. and Irrigation Co., now of Turin, Alta., born in Scotland, Feb. 16, 1849.

J. K. McNeillie, Superintendent, District 3, Eastern Division, C.P.R., Montreal, born at Toronto, Feb. 23, 1874.

D. C. Macdonald, Assistant General Claims Agent, C.P.R., Winnipeg, born at Elmsdale, N.S., Feb. 9, 1874.

D. MacPherson, M. Can. Soc. C.E., ex-Assistant to Chairman, National Transcontinental Ry. Commission, Ottawa, born at Bath, Ont., Feb. 2, 1858.

C. S. Maharg, Superintendent, District 3, Manitoba Division, C.P.R., Brandon, born in Dufferin County, Ont., Feb. 4, 1867.

V. J. Melsted, Engineer of Water Service, Western Lines, C.P.R., Winnipeg, born at Gardar, N.D., Feb. 20, 1887.

G. A. Montgomery, General Superintendent, Algoma Central and Hudson Bay Ry., and Algoma Eastern Ry., Sault Ste. Marie, Ont., born at Bradford, Ont., Feb. 11, 1871.

A. Z. Mullins, Commercial Agent, G.T.R., Grand Rapids, Mich., born at Appin, Ont., Feb. 14, 1862.

M. G. Murphy, District Passenger Agent, C.P.R., Toronto, born at Halifax, N.S., Feb. 26, 1878.

J. E. Proctor, District Passenger Agent, C.P.R., Regina, Sask., born at Sarnia, Ont., Feb. 17, 1878.

C. T. Radalls, Car Foreman, C.P.R., London, Ont., born at St. Heliers, Jersey, Channel Islands, Feb. 8, 1864.

J. E. Robitaille, Treasurer, Roberval-Saguenay Ry., Chicoutimi, Que., born at Quebec, Feb. 17, 1870.

A. E. Rosevear, General Freight Agent, G.T. Pacific Ry. and G.T. Pacific Coast Steamship Co., Winnipeg, born at Montreal, Feb. 20, 1863.

H. H. Schaefer, ex-Division Freight Agent, Intercolonial Ry., Moncton, N.B., born at Cologne, Germany, Feb. 10, 1848.

J. G. Scott, ex-General Manager, Quebec and Lake St. John Ry., Quebec, born there Feb. 13, 1847.

J. J. Scully, General Superintendent, Lake Superior Division, C.P.R., North Bay, Ont., born at Montreal, Feb. 3, 1872.

G. Spencer, Assistant Chief Operating Officer, Board of Railway Commissioners, Winnipeg, born in London, Eng., Feb. 21, 1865.

R. H. Sperling, Assistant to Chairman of the Board, British Columbia Electric Ry., London, Eng., born there, Feb. 9, 1876.

H. E. Suckling, Treasurer, C.P.R., Montreal, born at Gibraltar, Feb. 27, 1851.

Hugh Sutherland, Executive Agent, Canadian Northern Ry., Winnipeg, Man., born at New London, P.E.I., Feb. 22, 1845.

Sir Wm. C. VanHorne, K.C.M.G., Director, C.P.R., and President, Cuba Co., Montreal, born in Will County, Ill., Feb. 3, 1843.

F. L. Wanklyn, M. Can. Soc. C.E., General Executive Assistant, C.P.R., Montreal, born at Buenos Ayres, Feb. 25, 1860.

J. R. Watson, Assistant Superintendent, Sleeping, Dining and Parlor Cars and News Service, Eastern Lines, C.P.R., Montreal, born at Morpeth, Eng., Feb. 8, 1873.

John L. Weller, M. Can. Soc. C.E., Engineer-in-charge Welland Ship Canal, St. Catharines, Ont., born at Cobourg, Ont., Feb. 13, 1862.

A. Williams, Superintendent, District 2, Atlantic Division, C.P.R., Woodstock, N.B., born at Mono Road, Ont., Feb. 22, 1872.

## Disinfectant System for Trains and Lake Steamships.

A system of sewage disinfection for Great Lakes steamships as well as for trains has, according to a Detroit, Mich., press report, been worked out by Sanitary Engineer L. C. Frank, of the U. S. Public Health Service, and it is expected that the Treasury Department at Washington will issue regulations based on the plan devised. The action follows the U. S. Government's enquiry into the outbreaks of typhoid in 1913 among persons who had been fellow tourists on certain Great Lake steamships.

Prof. E. B. Phelps has suggested that steam might be used to disinfect the sewage from steamships and railway cars before it is discharged and a device has been designed to perform this function automatically. This device may be used wherever it is desired, to heat to 100 degrees centigrade and discharge automatically any liquid which is received intermittently or continuously. The device will apply in particular to the disinfection of sewage or lavatory waste from steamships or from steam, electric or gasoline trains.

Preliminary studies of the cost of operation indicate that with steam as heating agent, the disinfection of one closet would cost about 7½c. per 1,000 flushes. Therefore, if each steamer closet discharges on the average 50 times every day, the cost of disinfection a day per closet on steamships will be 5c.

## Expenditures on Grade Crossings by Board of Railway Commissioners.

Following is a statement of amounts paid by railway companies, municipalities and out of the Railway Grade Crossing Fund to April 1, 1914, in connection with orders by the Board of Railway Commissioners:

Fiscal Year.	Railway Companies.	Municipalities.	Grade Crossing Fund.
1909-10 ...	\$ 30,242.91	\$ 7,703.76	\$ 70.00
1910-11 ...	196,733.50	23,433.99	6,909.18
1911-12 ...	155,866.45	31,537.20	12,630.68
1912-13 ...	15,395.69	2,691.51	26,152.24
1913-14 ...	4,694.88	906.33	41,877.93

Totals .. \$402,933.43 \$69,272.79 \$87,640.03

This includes all payments to date, with the exception of the St. Lawrence Boulevard Subway, St. Louis, Que. (order 8339), which provides for \$5,000 from the Railway Grade Crossing Fund, \$15,000 to be paid by the Montreal St. Ry. and the balance by the C.P.R. and the municipality, as agreed upon between themselves.

## General Clauses for Contract Specifications.

The Canadian Society of Civil Engineers' Committee on this subject, of which H. Holgate, Montreal, is chairman, presented a report at the annual meeting in Montreal in January, from which the following are extracts:—

"We have compiled the accompanying form of general clauses from various sources, and have revised, altered and added to them as we thought necessary. We have arranged them in a manner which, we hope, will be satisfactory, and have endeavored to cover the necessities of various classes of work. By the use of this or a similar form of general conditions, the form of contract and of the specification can be very much abbreviated, as many of these clauses would of necessity be incorporated in either the contract or specification, and by its use the standardization of forms of contract would be advanced.

"Though perhaps somewhat beyond the question that we have been asked to report on, we would recommend that all contracts should embrace in one document:—The agreement or contract itself; the tender or a certified copy of it; the specification; the general clauses; the signed drawings as tendered on; any modified drawings agreed to prior to signing of contract. Preferably these should be printed documents.

"In case of the adoption of a form of general conditions we would suggest that the Society have it printed and sold to the membership at a moderate charge."



## Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue a list of orders passed by the Board of Railway Commissioners, so that subscribers who have filed our paper have a continuous record of the Board's proceedings. No other paper has done this.

The dates given of orders, immediately following the numbers, are those on which the orders were drawn.

23004. Dec. 19.—Authorizing Erie & Ontario Ry. (T.H. & B. Ry.) to open for traffic line from Smithville to Dunnville, Ont., and to operate over grade crossings of M.C.R. near Attercliffe, and G.T.R. near Diltz and at Dunnville, subject to certain conditions.

23005. Dec. 15.—Amending order 22961, Nov. 30, 1914, re G.T.R. deviation near Welland, Ont.

23006. Dec. 3.—Amending order 20677, Oct. 24, 1913, re provision of cattle pass by C.N. Ontario Ry. for W. R. Kirk, Foresters Falls, Ont.

23007. Dec. 18.—Dismissing Toronto Board of Trade's application for an order including school crayons in stationery list of Canadian Freight Classification.

23008. Dec. 11.—Approving agreement between Bell Telephone Co. and Brussels Village, Ont., Dec. 1.

23009. Dec. 19.—Extending to Nov. 30, 1915, time within which Canadian Northern Ry. shall equip its cabooses with air brakes, subject to condition that cabooses already so equipped shall be kept in service as much as possible.

23010. Dec. 18.—Authorizing C.P.R. to use bridge 0.7 across Wellington St., Sherbrooke, Que.

23011. Dec. 17.—Approving agreement between Bell Telephone Co. and Princeton & Drumbo Telephone Co., Dec. 4.

23012. Dec. 17.—Approving location of G.T.R. new station at Inglewood Jct., Ont.

23013. Dec. 18.—Authorizing Saskatchewan Highway Commissioners to build road over Canadian Northern Ry. right of way in n.e. ¼ Sec. 33-43-16, W. 3 M. After crossing has been built, C.N.R. is authorized to close portion of original road allowance north of n.w. ¼ Sec. 33, within its right of way.

23014. Dec. 12.—Relieving C.P.R. from speed limitation of 10 miles an hour over crossing of 8th St. East, Calgary, Alta.

23015. Dec. 17.—Authorizing Cedar Rapids Mfg. & Power Co., Montreal, to take additional 25 ft. across portion of Lot 123, North River, Delisle, St. Ignace du Coteau du Lac Parish, Que.

23016. Dec. 14.—Authorizing Vancouver, Victoria and Eastern Ry. and Navigation Co. (G.N.R.) to erect station at New Westminster, B.C., within 60 days.

23017. Dec. 11.—Authorizing C.P.R. to build spur for City of Swift Current, Sask.

23018. Dec. 21.—Amending order 22871, Nov. 16, re G.T. Pacific Ry. fencing between Irma and Kinsella, Man., by substituting Alta. for Man.

23019. Dec. 18.—Recommending to Governor in Council for sanction the General Train and Interlocking Rules of Quebec, Montreal & Southern Ry., approved by its bylaw 26.

23020. Dec. 22.—Suspending Supplement 1 to C.P.R. Competitive, Proportional and Joint Freight Tariff, C.R.C. no. E-2847, to become effective Jan. 4, 1915, pending hearing of applications at sittings of Board at Ottawa, Jan. 5; also suspending Supplement 16 to G.T.R. Special, Local, Joint and Proportional Tariff, C.R.C. no. E-2588, to become effective Jan. 4, 1915, increasing its rates on same commodity from same territory to same point, via Sherbrooke, and Boston & Maine Rd.

23021. Dec. 19.—Dismissing Fort William Board of Trade's application for order directing C.P.R. to provide local freight sheds, separate from wharf sheds.

23022. Dec. 23.—Establishing express collection and delivery limits in Cobalt, Ont.

23023, 23024. Dec. 18, 21.—Authorizing the Hydro Electric Power Commission of Ontario to erect wires across C.P.R. at Kenzie St., Woodbridge, and across G.T.R., at Lot 118, Thorold Tp., Ont.

23025. Dec. 23.—Authorizing C.P.R. to open for traffic portion of Kootenay Central Ry. from Fort Steele to Edgewater, mileage 23.06 to 59 south from Golden, B.C.

23026. Dec. 22.—Approving C.P.R. clearances at siding at coal and wood warehouse, Sudbury, Ont.

23027. Dec. 23.—Authorizing C.N. Ontario Ry. to operate over crossing of C.P.R. Stobie Branch in Lot 4, Con. 5, McKim Tp., upon its putting interlocking plant into operation; after interlocking plant is in use C.P.R. is authorized to operate over crossing at speed not exceeding 15 miles an hour, without first stopping trains; and rescinding order 22927, Dec. 1.

23028. Dec. 22.—Authorizing G.T. Pacific Ry. and Fort William Electric Ry., pending instal-

lation of half interlocking plant, to operate over crossing on Empire Ave., at Sprague St., Fort William, Ont., half interlocking plant to be completed by May 31, 1915.

23029. Dec. 23.—Certifying correction in G.T. Pacific Branch Lines Co.'s plans by endorsing thereon affidavit of J. E. Gray, Winnipeg, Dominion Land Surveyor.

23030. Dec. 22.—Ordering G.T.R. to install gates at crossing of Gage Ave., Hamilton, Ont., to be operated by day and night watchmen, appointed by company; 20% cost of gates to be paid out of railway grade crossing fund; wages of watchmen, half by City of Hamilton.

23031, 23032. Dec. 22.—Authorizing Hydro Electric Power Commission of Ontario to erect wires across G.T.R. near Strathroy Station, and in Stayner, Ont.

23033. Dec. 23.—Authorizing C.N. Ontario Ry. to cross and divert public road between Lots 10 and 11, Pembroke Tp., and cross and divert highway in half Lot 10, carrying highway under tracks by subway.

23034. Dec. 21.—Dismissing application of farmers and citizens of Ensign, Alta., for order directing C.P.R. to continue station agent there, and ordering C.P.R. to have station building at Ensign heated before arrival and departure of passenger trains during cold weather.

23035. Dec. 22.—Authorizing British Columbia Public Works Department to build level highway crossing over Great Northern Ry. near White Rock station.

23036. Dec. 19.—Authorizing City of Toronto to waterproof superstructure of subway at Keele St., under C.P.R., company to maintain it in that condition in future.

23037. Dec. 23.—Certifying correction in G.T. Pacific Branch Lines Co.'s plan, showing location of Biggar-Calgary Branch from mileage 77.13 to 104.06, Saskatoon District, Sask., by endorsing thereon affidavit of J. E. Gray, Winnipeg, Dominion Land Surveyor.

23038. Dec. 23.—Ordering Esquimalt and Nanaimo Ry., within 60 days, to install bell at crossing of Victoria and Campbell River trunk road; to ring only when trains approach from south; 20% of cost to be paid out of railway grade crossing fund, and rescinding order 22817, Nov. 4.

23039. Dec. 23.—Recommending to Governor in Council for sanction, lease of Southampton Ry. to C.P.R., Nov. 14.

23040. Dec. 23.—Ordering Bay of Quinte Ry. to remove any station or buildings from J. James' land, Elzevir Tp., Ont., and not to erect any buildings thereon; that railway shall, upon it being shown by him that he is about to operate his mining property, within 3 months of such proof, build subway under its tracks sufficient for purpose of carrying on the mining business; also that J. James shall be at liberty to erect aerial trams across B. of Q.R. for the conveyance of material.

23041. Dec. 24.—Authorizing Kettle Valley Ry. to build bridges 32.65, 32.55 and 36.3 across Coquihalla River, B.C.

23042. Dec. 24.—Approving Canadian Northern Ry. plan showing its combined standard station and section house.

23043. Dec. 24.—Approving location of Erie & Ontario Ry. (T.H. & B.R.) through Moulton and Sherbrooke Tps., Ont., between Dunnville and Port Maitland, mileage 14.61 to 19.19.

23044. Dec. 24.—Authorizing Canadian Northern Ry. to build across and divert road in south half Sec. 18-29-27, W. 3 M., Sask., subject to condition that land necessary for diversion be secured by C.N.R. in name of Province of Saskatchewan.

23045. Dec. 24.—Ordering that 20% of cost of installing gates at crossing of first highway east of Clarkson Station, Ont., by G.T.R., be paid out of railway grade crossing fund; remainder:—25% by Toronto Tp. and 75% by G.T.R.; cost of maintenance:—75% by G.T.R. and 25% by Toronto Tp., the 25% to cover expense of watchmen employed at crossing since erection of gates.

23046. Dec. 23.—Appointing Judge Winchester, of York County, as arbitrator to adjust claims for damages occasioned by construction of subways in Toronto, authorized under orders 16842 and 16846.

23047. Dec. 22.—Ordering Great Northern Ry., within 60 days, to install improved type of automatic bell at crossing of Front St., near intersection of Columbia St., New Westminster, B.C.; 20% of cost to be paid out of railway grade crossing fund.

23048. Dec. 24.—Approving location of G.T. Pacific Ry. station at Hutton, B.C., mileage 1220.6 west of Winnipeg.

23049. Dec. 24.—Authorizing Toronto Hydro Electric System to erect wires across C.P.R. and G.T.R. at Ruskin Ave., Toronto.

23050. Dec. 10.—Authorizing Canadian Northern Ry. to carry traffic over its line between Grand Marais and Birds Hill, Man., 50 miles, until July 15, 1915.

23051. Dec. 23.—Authorizing Vancouver, Vic-

toria and Eastern Ry. and Navigation Co. (G. N.R.) to build spur for McLellan Lumber Co., Guichon, B.C.

23052. Dec. 28.—Approving location of Canadian Northern Ry. third class station at Turleford, Sask.

23053. Dec. 26.—Authorizing City of Toronto to repair sidewalks on bridge at Moore Ave., and rescinding order 22304, July 31.

23054. Dec. 28.—Extending to Feb. 28, 1915, time within which C.P.R. shall build transfer track at Coldwater, Ont.

23055. Dec. 28.—Authorizing C.P.R. to build road diversion in Sec. 13-6-8, W. 4 M., at mileage 71.16 of Weyburn-Stirling Branch.

23056. Dec. 28.—Authorizing C.P.R. to close station at Three Valley, B.C.

23057. Dec. 28.—Authorizing Canadian Northern Ry. to open for traffic its line from junction with Battle River Subdivision north of Camrose to junction with C.N. Western Ry. near Strathcona, Alta., 46 miles; speed of trains limited to 25 miles an hour.

23058. Dec. 28.—Extending to July 1, 1915, time within which Canadian Northern Ry. shall complete alterations and additions to its station building at Alsask, Sask.

23059. Dec. 29.—Amending order 22721, Oct. 16, re opening of double track for traffic on its White River Subdivision, Ont.

23060. Dec. 23.—Approving location and details of G.T. Pacific Ry. station at Ribstone, Alta.

23061. Dec. 11.—Dismissing application of Town of Courtenay, B.C., for order directing Esquimalt & Nanaimo Ry. to permit B.C. Government to make road from freight shed northwesterly to Lake Trail, approximately 900 ft. to obviate haul now necessary between the trail and freight shed of approximately 5,700 ft.

23062. Dec. 29.—Authorizing Kettle Valley Ry. to connect with Vancouver, Victoria & Eastern Ry. (G.N.R.) at Hope, B.C.

23063. Dec. 24.—Authorizing G.T.R. to cross Toronto, Grey & Bruce Ry. (C.P.R.) at grade with its spur for Elias Rogers Co., south of St. Clair Ave., Toronto, crossing to be protected by interlocking plant.

23064. Dec. 29.—Authorizing Ingersoll, Ont., Electric Power and Light Commission to erect wires across C.P.R. on Wingham St., between Charles and Hamilton Sts., Ingersoll, Ont.

23065. Dec. 29.—Authorizing C.P.R. to open for traffic additional track and diversions at various points on its Lake Superior Division, Ont.

23066. Dec. 29.—Extending to Apr. 30, 1915, time within which C.P.R. shall complete spurs in York Tp. on land owned by Canadian Kodak Co.

23067. Dec. 29.—Authorizing G.T.R. to rebuild bridge 317, near Weyvale, Ont.

23068. Dec. 31.—Approving location of Erie & Ont. Ry. (T.H. & B. Ry) station at Diltz Jct., Ont.

23069. Dec. 30.—Authorizing C.P.R. to build spur for Austin & Nicholson, Tp. 37, Sudbury District, Ont.

23070. Dec. 29.—Approving C.P.R. clearance between northerly track of its team yard and three poles on south side St. Ambrose St., Montreal, owned by Montreal Light, Heat and Power Co.

23071. Dec. 3.—Authorizing Sandwich, Windsor & Amherstburg Ry. to connect track leading to car barn to Michigan Central Rd. team tracks, Windsor, Ont.

23072. Dec. 29.—Authorizing Canadian Northern Ry. to discontinue station agent at Lorette, Man., company to appoint caretaker to keep waiting room cleaned and heated for arrival and departure of passenger trains, to see that l.c.l. freight is properly housed and freight shed locked, and freight delivered to consignees.

23073. Dec. 30.—Authorizing Canadian Northern Ry. to build transfer track between its Strathcona-Edmonton branch (formerly Edmonton, Yukon & Pacific Ry.); and to build across Nineteenth Ave. South and cross and divert Bay Lakes Trail, Edmonton, Alta.

23074. Dec. 31.—Rescinding order 17840, in so far as it relates to Vancouver, Victoria & Eastern Ry. overhead crossings at Pender, Keefe, and Harris Sts., Vancouver, B.C.; and reserving leave to any party to make new application; V. & E. Ry. & Nav. Co. to erect crossing signs and flag all trains over crossings.

23075. Dec. 31.—Approving C.P.R. overhead clearances at Victoria and McKay Ave. bridges, Edmonton, Alta.

23076. Dec. 31.—Dismissing application of S. S. Hamilton Co., Moose Jaw, Sask., for order directing Canadian Northern Ry. and C.P.R. to build transfer track at Hawick, Alta.; or, in the alternative, for order directing the issue of joint freight tariff on coal between Drumheller and Moose Jaw, via Calgary, Alta.

23077. Jan. 2.—Recommending to Governor in Council for approval New York Central & Hudson River Rd. rules 11, 27, 466, 484, and 507, as modified.

23078. Dec. 31.—Amending order 18580, Jan. 24, 1913, re Canadian Northern Ry. crossing of Water Ave., Winnipeg.

23079. Jan. 4.—Extending to March 31 time within which C.P.R. shall install bell at highway



between lots 5 and 6, mileage 12.61, Toronto Tp., Ont.

23080. Dec. 30. — Authorizing Hydro-Electric Power Commission of Ontario to erect wires across G.T.R., near Paris station, Ont.

23081. Jan. 2. — Ordering G.T.R. to change time of train 191 to leave Stratford at 7.50 a.m. and arrive at Palmerston at 9.15, timing it at Listowel at 8.45 a.m. or 8.48 a.m., if desired, to meet opposing train at latter time.

23082. Dec. 31. — Authorizing City of Regina, Sask., to build overhead bridge across C.P.R. on Hamilton St., Regina.

23083. Jan. 2. — Authorizing C.P.R. to take for highway, certain lands adjoining southern limit of main line right of way in s.w. quarter section 32-16-24, w. 2 m., Sask., containing by admeasurement 4.06 acres, more or less.

23084. Dec. 30. — Ordering that Canadian Northern Ry. crossing by Suburban Rapid Transit Co. on Portage Ave., Winnipeg, Man., be protected by a half-interlocking plant with derails; plans to be submitted for approval of board's engineer by Feb. 1; work to be completed by June 15; cost of installing to be paid, 50% by C.N.R., 25% by Winnipeg Electric Ry., and 25% by Suburban Rapid Transit Co.; maintenance and operation to be paid, 40% by C.N.R., 30% by Winnipeg Electric Ry., and 30% by Suburban Rapid Transit Co.; watchman employed in the meantime to be paid, 40% by C.N.R., 30% by Winnipeg Electric Ry., and 30% by Suburban Rapid Transit Co.

23085. Dec. 18. — Dismissing application of municipality of Brokenhesh 68, Sask., for order directing Canadian Northern Ry., to build bridge over creek at mileage 5.2, Moose Jaw Subdivision, and authorizing C.N.R. to cross and divert north and south road between sections 10 and 11, Tp. 7, R. 18, w. 2 m., Sask.; work to be completed by May 1, 1915.

23086. Jan. 2. — Authorizing C.P.R. to remove regular station agent at Ivry, Que., for winter months; company to provide reliable man to keep station heated and to look after baggage and express.

23087. Jan. 5. — Authorizing British Columbia Public Works Department to build level crossing over C.P.R., Arrow Lake branch, at corner of section 10-23-2, w. 6 m.

23088. Jan. 4. — Relieving Michigan Central Rd. from providing watchmen or other protection at crossing of second public highway west of Tillsonburg station, Ont.

23089. Jan. 5. — Authorizing G.T.R. to build siding for Rathbone & Lovering, York Tp., Ont.

23090. Jan. 7. — Ordering G.T. Pacific Ry. forthwith to establish a semi-weekly train service, in each direction, on its Regina-Moose Jaw and Northwestern branch, install a Y at Gilroy, Sask., to permit turning locomotives, and to provide box car stations at Central Butte, Gilroy, and Lawson; work to be completed by May 1.

23091. Jan. 7. — Authorizing C.P.R. to build siding for American Tar Products Co., La Salle, Que.

23092. Jan. 8. — Approving Edmonton, Dunvegan & British Columbia Ry. location through Tp. 78, R. 3 and 6, w. 6 m., Alta., mileage 331.89 to 360.47.

23093. Jan. 8. — Authorizing C.P.R. to build road diversion in s.w. quarter section 20-35-21, w. 3 m., Sask., and build its Kerrobert northeastern branch across same at grade at mileage 9.55.

23094. Jan. 8. — Authorizing C.P.R. to build highway diversion across its main line in Shawanaga Indian Reserve, Shawanaga Tp., Parry Sound District, Ont.

23095. Jan. 8. — Authorizing Canadian Northern Ry. to build spur for Sterling Coal Co., Ltd., in s. w. quarter section 9-29-20, w. 4 m., Alta.

23096. Jan. 7. — Authorizing C.P.R. to discontinue services of agent at Meadows station, Man., company to keep building cleaned and heated and have package freight and express matter properly housed.

23097. Jan. 8. — Approving C.P.R. clearance at bridge 112.6, carrying Sandwich St., Windsor, Ont., across its tracks.

23098. Jan. 9. — Rescinding order 13963, June 15, 1911, in so far as it authorizes C.P.R. to build its Kipp to Aldersyde branch across road allowances at mileage 41.47, 57.03, and 83.51, and authorizing it to build across diversion of road allowances at mileage 41.47, 57.03, and 83.51.

23099. Jan. 7. — Rescinding order 22646, Oct. 1, 1914, re stopping of C.P.R. train 211 at Highlands, Que.

23100 to 23104. Jan. 9. — Authorizing Hydro-Electric Power Commission of Ontario to erect wires across G.T.R. at five points in Simcoe, Ont.

23105. Jan. 8. — Authorizing Edmonton, Dunvegan & British Columbia Ry. Co. to cross and divert 30 highways in Alberta, mileage 331 to 360.

23106. Jan. 9. — Ordering that while Intercolonial Ry. is operating its eastbound train known as Ocean Limited, Quebec Oriental Ry. shall hold its eastbound train daily, except Sunday, at Matapedia for connection, from May 1 until Nov. 1, and on Saturdays only from Nov. 1 until May 1 each year; time tables so arranged to be filed with board by April 1.

23107 and 23108. Jan. 8. — Approving location of Erie & Ontario Ry. (T.H. & B. Ry.) stations at Vaughan, mileage 5.17, and at Port Davidson, mileage 7.68, Ont.

23109. Jan. 11. — Authorizing Erie & Ontario Ry. (T.H. & B. Ry.) to open for traffic its branch lines to freight and passenger stations at Dunnville, Ont.

23110. Jan. 11. — Approving revised location of portion of C.P.R. Weyburn-Stirling branch line, from section 13-6-9, easterly to section 12-6-7, w. 4 m., mileage 64.34 to 77.84, Alberta.

23111. Jan. 11. — Authorizing G.T.R. and Campbellford, Lake Ontario & Western Ry. (C.P.R.) to operate over crossings at mileage 119.90, 119.91, and 120.02, Cobourg, Ont., until June 1 all trains to be stopped before crossing and to be flagged over, pending installation of interlocking plants.

23112. Jan. 11. — Authorizing C.P.R. to build road diversion in section 34-16-11, w. 3 m., Sask.; and build additional track, Swift Current subdivision, across same, at mileage 92.17.

23113. Jan. 11. — Authorizing C.P.R. to open for traffic portion of double track, mileage 0 to 0.5, Thompson Subdivision, B.C.

23114. Jan. 11. — Amending order 22293, July 17, 1914, re C.P.R. farm crossings in Bolton Tp., Que.

23115. Jan. 11. — Ordering G.T.R. to protect crossing of Bridge St., Meaford, Ont., by watchman during switching operations, and arrival and departure of passenger trains.

23116. Jan. 9. — Approving agreement of Bell Telephone Co. with Central Dufferin Telephone Association, Dec. 21, 1914.

23117. Jan. 11. — Authorizing Bow Valley rural municipality 219, Alta., to build 3 highway crossings over C.P.R.

23118. Jan. 12. — Relieving Canadian Northern Ry. and G.T. Pacific Ry. from maintaining night signalman at crossing at Dana, Sask.

23119. Jan. 12. — Relieving C.P.R. and G.T. Pacific Branch Lines Co. from maintaining night signalman at crossing at Alix, Alta.

23120. Jan. 12. — Relieving Canadian Northern Ry. and C.P.R. from maintaining night signalman at crossing at Stettler, Alta.

23121. Jan. 12. — Relieving C.P.R. and G.T. Pacific Branch Lines Co. from maintaining night signalman at crossing at Frobisher, Sask.

23122, 23123. Jan. 12. — Relieving C.P.R. and Canadian Northern Ry. from maintaining night signalmen at crossings at Bienfait and Carlyle, Sask.

23124. Jan. 12. — Relieving C.N.R. and Great Northern Ry. from maintaining night signalman at crossing at Roland, Man.

23125, 23126. Jan. 12. — Relieving C.P.R. and Canadian Northern Ry. from maintaining night signalmen at crossing at Midale, Sask., and Hartney, Man.

23127. Jan. 12. — Relieving C.P.R. and G.T. Pacific Branch Lines Co. from maintaining night signalman at crossing at Griffin, Sask.

23128 to 23131. Jan. 12. — Relieving Canadian Northern Ry. and C.P.R. from maintaining night signalmen at crossings at Forward, Sask., Carberry and Findlay, Man., and Conquest, Sask.

23132. Jan. 12. — Relieving G.T. Pacific Branch Lines Co. and C.P.R. from maintaining night signalman at crossing at Yorkton, Sask.

23133. Jan. 12. — Relieving Canadian Northern Ry. and G.T. Pacific Ry. from maintaining night signalman at crossing at Empire Ave., Fort William, Ont.

23134. Jan. 13. — Relieving G.T.R. from providing further protection at Marsh Winery crossing, about 3 miles west of Niagara Falls, Ont.

23135. Jan. 13. — Approving location of Canadian Northern Ry. third class station at Wisetown, Sask.

23136. Jan. 13. — Ordering that Canadian Northern Ry. diversion, authorized by order 19631, June 18, 1913, near Victoria Bridge, Calgary, Alta., be completed by March 1.

23137, 23138. Jan. 11, 13. — Approving Bell Telephone Co. agreements with Canadian Telephone Co., Dec. 28, 1914, and with Dover Tp., Ont., Dec. 24, 1914.

23139. Jan. 12. — Authorizing G.T.R. to open for traffic portion of deviated line through Grantham Tp., Town of Thorold, and Thorold Tp., Ont., and temporary cross over to connection with present line at bridge 11, Welland Canal.

23140. Jan. 12. — Approving deviation of Dominion Atlantic Ry. main line from near Chestnut St., Windsor, to north side of Avon River, N.S., 3.250 ft.

23141. Jan. 13. — Authorizing West Kildonan municipality, Man., to build highway over C.P.R. Selkirk Branch at Enniskillen Ave.; and dismissing similar application respecting Kenilworth Ave.

23142. Jan. 12. — Rescinding order 22505, Sept. 5, 1914, authorizing C. N. Ontario Ry. to build spur for Hawkins Bros., Parry Sound.

23143. Jan. 14. — Relieving Canadian Northern Ry. and Midland Ry. of Manitoba (G.N.R.) from maintaining night signalman at crossing at Carman, Man.

23144. Jan. 14. — Relieving Brandon, Saskatchewan & Hudson Bay Ry. (G.N.R.) and Canadian Northern Ry. from maintaining night signalman at crossing in Sec. 31-1-18, w.p.m. Man.

23145 to 23148. Jan. 14. — Relieving C.P.R. and Canadian Northern Ry. from maintaining

night signalmen at crossings at Rosetown, Sask.; Brookdale, Man.; in Sec. 35-24-27, and in s.e. and s.w. ¼ Sec. 28-25-24, w. 4 m., Alta.

23149. Jan. 14. — Relieving G.T. Pacific Ry. and Canadian Northern Ry. from maintaining night signalman at crossing at Petrel, Man.

23150. Jan. 12. — Authorizing C.P.R. to build spur for Georgetown Collieries Ltd., Canmore, Alta.

23151. Jan. 14. — Relieving C.P.R. and Canadian Northern Ry. from maintaining night signalman at crossing at Morris, Man.

23152. Jan. 14. — Relieving C.P.R. and Canadian Northern Ry. from maintaining night signalman at crossing at Holmfild, Man.

23153. Jan. 13. — Dismissing application of Central Convention of Farmers' Institutes of British Columbia for order granting privilege of shipping mixed carloads of flour and feed (in sacks) and baled hay and straw at carload rates.

23154. Jan. 15. — Relieving C.P.R. and Canadian Northern Ry. from maintaining night signalman at crossing at Maryfield, Sask.

23155 to 23157. Jan. 15. — Relieving G.T. Pacific Ry. and Canadian Northern Ry. from maintaining night signalmen at crossings at St. Boniface, Man.; Leaman, Alta.; and Harte, Man.

23158, 23159. Jan. 15. — Relieving G.T. Pacific Branch Lines Co. and C.P.R. from maintaining night signalmen at crossings at Druid and Oban, Sask.

23160. Jan. 15. — Relieving C.P.R. and G.T. Pacific Ry. from maintaining night signalman at crossing at Reford, Sask.

23161. Jan. 15. — Relieving Canadian Northern Ry. and G.T. Pacific Ry. from maintaining night signalman at crossing at Ryley, Alta.

23162. Jan. 15. — Relieving G.T. Pacific Ry. and C.P.R. from maintaining night signalman at crossing at Deer, Man.

23163. Jan. 15. — Relieving G.T.R. Branch Lines Co. and Canadian Northern Ry. from maintaining night signalman at crossing at Lampman, Sask.

23164. Jan. 15. — Relieving G.T. Pacific Branch Lines Co. and C.P.R. from maintaining night signalman at crossing at Neeley, Sask.

23165. Jan. 15. — Relieving Canadian Northern Ry. and Great Northern Ry. from maintaining night signalman at crossing at Minto, Man.

23166. Jan. 15. — Approving Michigan Central Rd. plan of 6th-7th side road drain across Cons. 2 to 8, Brooke Tp., Ont.

23167. Jan. 15. — Ordering that \$5,000 towards cost of building bridge from Coutts St., produced, north from Baroness Road, across C.P.R. yards, Lethbridge, Alta., be paid out of railway grade crossing fund, and be divided equally between C.P.R. and city.

23168. Jan. 15. — Authorizing G.T.R. to build siding and spur for Campbell Flour Mills Co., West Toronto, Ont., and approving clearances.

23169. Jan. 16. — Approving C.N. Ontario Ry. location through Trenton, Ont.; the rearrangement of Central Ontario Ry. tracks to permit of location between mileae 145 and 145.94 from Ottawa; and crossing of Joseph, King, and Dundas Sts.; and location along Division St.; and authorizing crossing of Joseph, King, and Dundas Sts.

General order 133. Dec. 19. — Suspending proposed cancellation, on Jan. 1, 1915, of arrangements whereby mixed carloads of foreign and native liquors and mixed carloads of groceries, classified 5th class in straight carloads and dried fruits, classified 4th class in straight carloads, are carried at their respective carload rates between points west of and including Port Arthur, and thence from eastern shipping points.

**Rogers Pass Tunnel Suit.**—The hearing of the action of McIlwee and Sons, against Foley, Welch and Stewart for damages consequent on the cancellation of a sub-contract on the C.P.R. Rogers Pass tunnel contract, was begun in Vancouver, Jan. 5. The case was expected to last a considerable time.

The paper by Alfred Price, Assistant General Manager, Eastern Lines, C.P.R., on Some Maximums and Minimums in Train Operation, on the first two pages of this issue, was read before the Canadian Railway Club in Montreal, which should have been stated on one of those pages.

**Western Canada Ry. Club.**—An address was given to the members at Winnipeg, Jan. 11, by A. Calder, formerly of the C.P.R. Passenger Department there, in which he gave many details of early railway history in the West.

**C.P.R. Hotels** during the year ended June 30, 1914, served 2,901,598 meals to guests and employees, an average of 7,650 a day, showing that 2,973 persons were supplied with three meals a day.



## A Problem in Economics of Mountain Railway Location at Rogers Pass, B.C.

By J. G. Sullivan, M. Can. Soc. C.E., Chief Engineer, Western Lines, Canadian Pacific Railway.

The data to be taken into account is as follows: Present location, total distance 23.1 miles, revised location 18.68 miles, as shown in fig. 1; grades are as shown in fig. 2, and consist, on the present location of 16.65 miles up hill for westbound traffic on maximum grade of 2.2%, 6.45 miles down grade same maximum with a total rise of 1,726 ft. and a drop of 692.1 ft. with 1,860 degrees of curvature on the up hill and 1,288 degrees on the down hill portion of the line. The revised location consists of 16.77 miles up hill with about 5 miles of 2.2% pusher grade, the balance 1% and a down hill run of 1.91 miles with a maximum 2.2% grade; a total rise of 1,178.2 ft. and a drop of 144.3 ft., with 635 degrees of curvature on the up hill grade and 66 degrees on the down hill. The average traffic for 1912 and 1913, which is made the basis of calculations, was 1,342½ passenger trains in each direction; the average weight of the passenger trains, exclusive of locomotives, was 443 tons; 980 of the passenger trains required pusher locomotives; the weight of the passenger and pusher locomotives for passenger trains was

Resistance to overcome, on present line.	
Actual rise, 692.1 ft. ....	692.1 ft.
Curve resistance, $1,288^\circ \times .04$ ft. ....	51.5 ft.
Friction resistance, 6.45 mls. $\times$ 15 ft. ....	96.7 ft.
<b>Total</b> .....	<b>840.3 ft.</b>
Resistance to overcome, tunnel line.	
Actual rise, 144.3 ft. ....	144.3 ft.
Curve resistance, $66^\circ \times .04$ ft. ....	2.6 ft.
Friction resistance, 1.91 mls. $\times$ 15 ft. ....	28.6 ft.
<b>Total</b> .....	<b>175.5 ft.</b>
<b>Difference</b> .....	<b>664.8 ft.</b>
3,281,890 tons $\times$ 664.8 ft. equals 2,181,800,472 foot tons.	
Westbound tonnage per year, including weight of locomotives, 3,191,488 tons.	
Resistance to overcome, present line.	
Actual rise, 1,726 ft. ....	1,726.0 ft.
Curve resistance, $1,860^\circ \times .04$ ft. ....	74.4 ft.
Friction resistance, 16.65 mls. $\times$ 15 ft. ....	249.7 ft.
<b>Total</b> .....	<b>2,050.1 ft.</b>
Resistance to overcome, tunnel line.	
Actual rise, 1,178.2 ft. ....	1,178.2 ft.
Curve resistance, $635^\circ \times .04$ ft. ....	25.4 ft.

70,681.0 pusher engine miles.	
Amount saved—27,236.0 train miles; 54,913.7 pusher engine miles.	
27,236 train miles at 22 cts. ....	\$ 5,991 92
54,913.7 pusher miles at 25 cts. ....	13,728 40
NOTE.—25 cents to cover engine crew wages, cost of repairs to pusher locomotives and extra cost of maintenance account of running pushers.	
Extra cost of maintenance of way:	
4.42 miles at \$200, plus 27,236 train miles at 20 cts. ....	6,331 20
Extra cost, maintenance of way, account of extra number of degrees of curvature, assuming that 400° of curvature per mile would increase rate at 20 cts. per train mile for maintenance by 30%.	
6,162 trains $\times$ 2,447° $\times$ 1-40 cts ....	3,769 60
Special maintenance, account 4½ miles snow sheds .....	85,000 00
Extra cost, maintenance of equipment, 27,236 train miles at 21 cts. ....	
Extra cost, maintenance of equipment, account of extra number of degrees of curvature, assuming that 400° of curvature per mile would increase rate of 21 cts. per train mile by 40%.	
6,162 trains $\times$ 2,447° $\times$ 21-1,000 cts. ....	3,166 47
<b>Total annual saving in cost of operation</b> .....	<b>\$170,635 61</b>

The rate at which traffic has been increasing would indicate that shortly after the work of constructing the tunnel was completed the traffic would have doubled. In this case, if no further economics were made in methods of operating this section

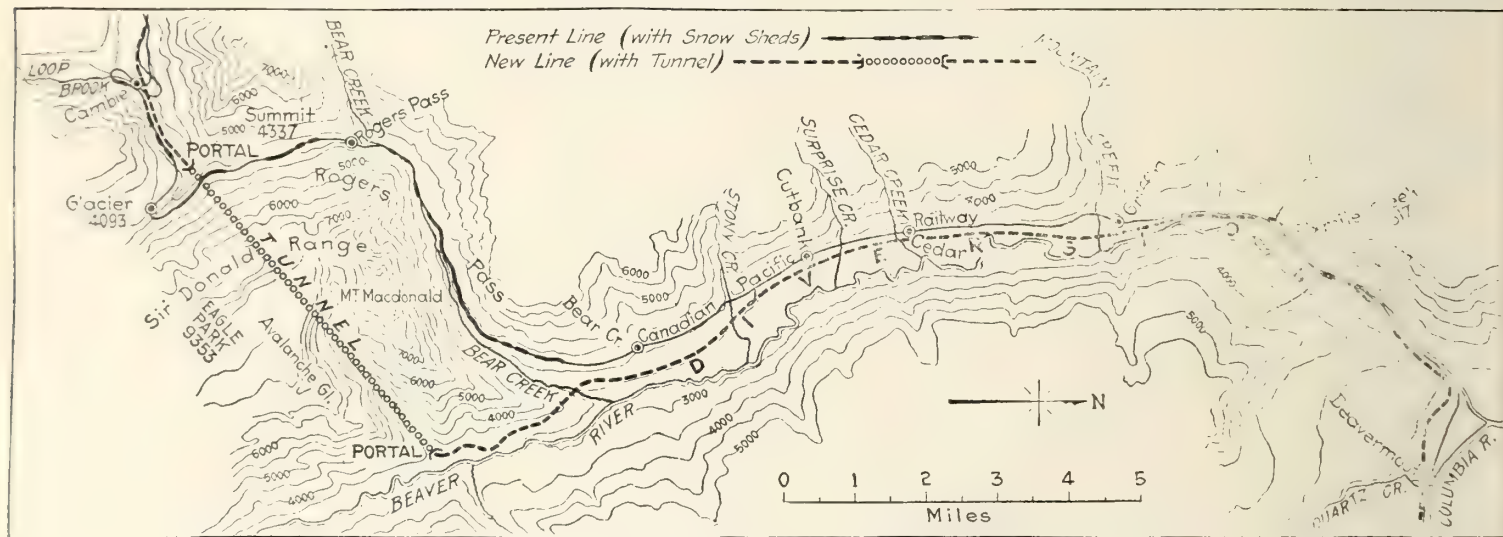


Fig. 1.—Rogers Pass Tunnel. Map of Old and New Lines.

175 tons each; there were 1,738½ freight trains in each direction per year; the average weight of the freight trains eastbound, exclusive of locomotives, was 950 tons; the average weight of freight trains westbound was 898 tons; all freight trains had to be pushed in both directions; weight of freight locomotives and pushers, 181 tons each. The tonnage eastbound and westbound was as follows:

EASTBOUND.		Tons.
1,342½ trains @ 443 tons each .....	594,727.5	
2,322 locomotives @ 175 tons each ..	406,350.0	
1,738½ freight trains @ 950 tons each	1,651,575.0	
2,477 locomotives @ 181 tons each ..	629,237.0	
<b>Total</b> .....	<b>3,281,889.5</b>	

WESTBOUND.		Tons.
1,342½ trains @ 443 tons each .....	594,727.5	
2,322 locomotives @ 175 tons each ..	406,350.0	
1,738½ freight trains @ 898 tons each	1,561,173.0	
3,477 locomotives @ 181 tons each ..	629,237.0	
<b>Total</b> .....	<b>3,191,487.5</b>	

Comparison of Comparable Factors affecting the Cost of operating over Rogers Pass, via Present Line and via Tunnel Line, now under construction, Average Traffic for 1912 and 1913.

Eastbound tonnage per year, including weight of locomotives, 3,281,890 tons.

Friction resistance, 16.77 mls. $\times$ 15 ft. ....	251.5 ft.
<b>Total</b> .....	<b>1,455.1 ft.</b>
<b>Difference</b> .....	<b>595.0 ft.</b>
3,191,488 tons $\times$ 595 ft. equals 1,898,935,360 foot tons.	
Total work done extra ... 2,181,800,472 foot tons	
1,898,935,360 foot tons.	
<b>Total</b> .....	<b>4,080,735,832 foot tons</b>

1,000 foot tons equals approximately 1 horse power hour. Assuming that 5 pounds of coal is consumed in doing one horse power hour's work and that coal on locomotive costs \$4.60 per ton, the saving in fuel will amount to:—

1,080,736 $\times$ 5 lbs. $\times$ \$4.60	
2,000 lbs (one ton)	
= .....	\$46,928 46

### EXTRA WAGES, TRAIN AND ENGINE CREWS.

Present Line.	
6,162 trains for 23.1 miles.	
5,437 pusher engines for 23.1 miles.	
142,342.2 train miles.	
125,594.7 pusher engine miles.	
Tunnel Line.	
6,162 trains for 18.68 miles.	
5,437 pusher engines for 13 miles.	
115,106.2 train miles.	

of track, the annual saving on account of operating over tunnel line would be:—

$$\$85,635.61 \times 2 \text{ plus } \$85,000.00 = \$356,271.22$$

In arriving at the above figures no account is taken of whether line was single or double track, and for comparative figures it was assumed that methods of operation would be the same. Now, as a matter of fact, the present single track line with double the present traffic would make the business too congested for economical single track operation. Therefore, it was apparent that it was time to study the question of double tracking the present line or seeking a new line for double track. It was decided to double track on the five mile tunnel location as shown in fig. 1, with grades as shown in fig. 2. Now to operate successfully a five mile tunnel we will require the installation of an electric plant and the purchase of electric locomotives. All the details of the proposed electrification have not been worked out, but even if they were, the reader is not interested in the details of cost. He can see at once that the problem was to find out if the cost of operating and maintaining the tunnel line, taking into account the extra costs of operating on account of having a short section



of electric operation and extra cost of maintaining tracks in the tunnel, plus the interest on the cost of building the new double track line, including the cost of electrifying the tunnel, would be less than the cost of operating and maintaining a double track line on the present location plus the interest on the cost of building the second track. The figures would not have been very decisive one way or the other were it not for the fact that there is now  $4\frac{1}{2}$  miles of wooden snow sheds on the present location which will be all done away with on the new location. The maintenance and renewals of these sheds cost between \$85,000 and \$100,000 a year. To maintain and renew a double track wooden shed would probably cost at least 50% more than the above, so that with a saving of about \$125,000 a year in maintenance and renewals of snow sheds and a calculated saving in operation and maintenance of \$171,271.22 on a traffic that surely will be reached in the near future, there was no doubt as to the proper course to pursue.

As to the details of figuring economics of railway location, the writer is well aware

speed between 7 and 35 miles an hour:—

$$R = 2.2 T + 121.6 C.$$

R = total resistance on level tangent.

T = total weight cars and contents in tons.

C = total number of cars in train.

This amounts to 4 lbs. per ton to 8 lbs. per ton, depending on whether cars are fully loaded or empty. This is equivalent to a rise of from 10 ft. to 20 ft. per mile. For mixed traffic a conservative estimate is train resistance equals rise of 15 ft. per mile.

It may appear that the rate of 25c. per actual pusher mile covering the cost of repairs and engine crew wages and extra cost of maintenance is too high, but as a matter of fact it is very conservative for the repairs, maintenance and renewals of the locomotives alone will run somewhere between 7c. and 10c. per mile, and we have had cases where the locomotive crew wages alone averaged 25c per mile for the actual mileage run, on account of delays to the pusher.

The foregoing was contributed by Mr. Sullivan to the Cornell Civil Engineer, pub-

## Traffic Orders by the Board of Railway Commissioners.

### C.P.R. Joint Tariff on Grain.

22989. Dec. 17.—Re Supplement 2 to C.P.R. Joint Tariff on Grain and other Commodities, C.R.C. no. W. 1890, published to become effective Jan. 1, 1915. Upon reading the application of the Taylor Milling & Elevator Co. and the Ellison Milling & Elevator Co., of Lethbridge, Alta., protesting against the proposed cancellation of the joint through rates prescribed by the order 20462, Oct. 2, 1913. It is ordered that that supplement be suspended pending the hearing and determination of the matter by the Board.

### Rates on School Crayons.

23007. Dec. 18. Re application of Toronto Board of Trade for an order including school crayons in the stationery list of the Canadian Freight Classification, it is ordered that the application be dismissed.

### Rates on Pulpwood to Mechanicville, N.Y.

23020. Dec. 22.—Re Supplement 1 to C.P.R. Competitive Proportional, and Joint

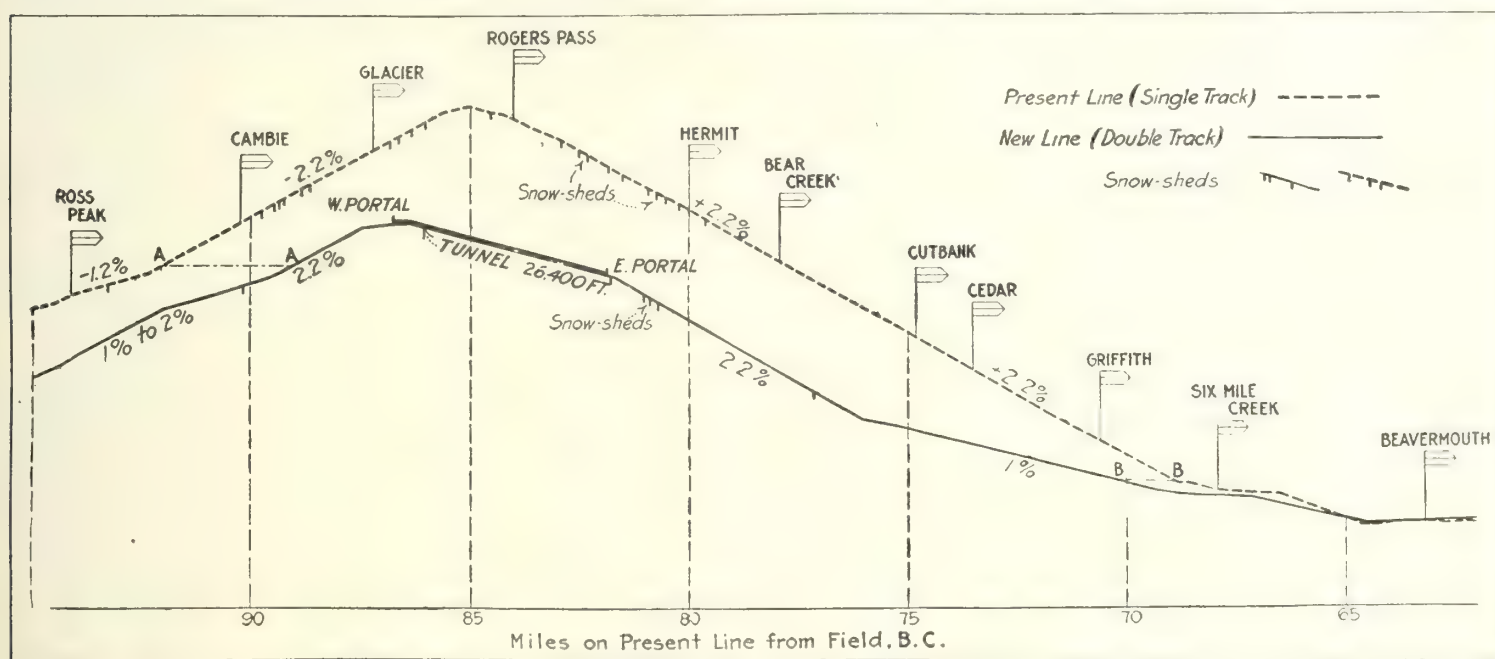


Fig. 2.—Rogers Pass Tunnel. Profile of Old and New Lines.

that it is impossible to devise any method that will show absolutely that saving in cost of operating one line over another, but he believes that the method herein followed, namely, that of comparing cost of fuel on the basis of work done rather than on a train mile or any other unit is much more logical and will give more reliable results than other methods that have been followed. The train mile is possibly the best unit for comparison in cost of wages and for cost of maintenance of equipment. In figuring maintenance of way a fixed sum should be taken, plus a rate per daily train rather than a fixed rate alone per train mile, for the reason that a certain amount of expense must be incurred regardless of whether trains are run or not. The fixed sum of \$200 a mile taken in this problem is probably about one half the actual sum that would be assumed if the entire cost of maintenance was to be included in this fixed sum per mile plus the rate per train mile for the reason that cost of maintenance of terminals and other items are not affected by the details of location between fixed terminals.

Frictional resistance, normal conditions, warm weather, modern freight equipment,

lished by the Association of Civil Engineers of Cornell University, Ithaca, New York, of which Mr. Sullivan is a graduate. Other articles on this tunnel have been published in Canadian Railway and Marine World, as follows:—April, Oct. and Nov., 1913; Jan., June, Oct. and Dec., 1914, and Jan., 1915.

### Grand Trunk Railway Secured Notes.—

The G.T.R. issued in London, Eng., in December, a prospectus of £1,000,000 three year  $5\frac{1}{2}\%$  secured notes dated Jan. 15, 1915, due Jan. 14, 1918, the issued price being £98 10s. The notes are secured by deposit with the trustee of £1,430,000 G.T.R. perpetual 4% consolidated debenture stock. The proceeds are to be applied to the company's general purposes. The prospectus stated that the net revenue for 1913 showed a surplus after providing for fixed charges of £975,000. The complete figures for 1914 were not available, but although the amount must be reduced owing to the depression of trade, the outbreak of war and the increase in net revenue charges, the net revenue available would cover the interest on the issue many times over. We are officially advised that the issue was fully subscribed.

Freight Tariff on pulpwood, C.R.C. no. E-2847, published to become effective Jan. 4, 1915, in connection with Boston & Maine Rd. Upon reading the application of Auger & Son and the d'Auteuil Lumber Co., both of the City of Quebec, protesting against the proposed increases in the joint through rates on pulpwood, in carloads, from C.P.R. stations south of the River St. Lawrence and east of Montreal to Mechanicville, over the C.P.R. and the Boston & Maine Rd. It is ordered that the said supplement be suspended pending the hearing of the said application at the sittings to be held at Ottawa on Jan. 5, 1915. And it is also ordered that Supplement 16 to G.T.R. Special Local, Joint, and Proportional Tariff, C.R.C. no. E-2588, published to become effective Jan. 4, 1915, increasing its rates on the same commodity from the same territory to the same points, via Sherbrooke, Quebec, and the Boston & Maine Rd., be suspended pending the hearing aforesaid.

A decided shop economy results from the use of the outside locomotive gear, as repairs to it can be more readily handled in the locomotive house shop.



## Progress of Work on the Quebec Bridge During the First Erection Season.

By H. P. Borden, Assistant to Chief Engineer.

During the past season substantial progress has been made toward the erection of the new Quebec Bridge. In spite of the fact that the actual start on the work of erecting the main trusses of the anchor arm was not made until the middle of July, 1914, over 80% of the north anchor arm, amounting to some 15,000 tons, has been entirely erected, and for the most part riveted. During the winter of 1913-1914, the traveler for this work was erected on the north shore, just clear of the abutment. On May 18, 1914, the traveler was completed and moved out over the approach span, which had been put in place the season before.

**Falswork.**—From a position over the north anchor pier a start was then made on the erection of the steel falswork extending between this pier, and the north main pier. The erection of two systems of falswork was required at this point: (1) An inside falswork, which was required to support the floor of the bridge during erection and upon which the traveler and all erection equipment and plant were handled; (2) an outside falswork, entirely independent of the first, which supported the trusses of the anchor arm during erection. The inside falswork consisted of seven bents, braced laterally and horizontally, the traveler moving ahead panel by panel as each bent was erected. These seven bents, covering a distance of 500 ft., were erected in practically two months, or at the rate of one bent a week.

On July 15, 1914, a start was made on the erection of the shoes on the north main pier. These shoes, weighing 400 tons each, had been completely erected in the shop before shipment and all holes reamed out either in place or to template, and all parts accurately matchmarked and stamped, so that the assembling at the site went ahead very quickly. By Aug. 1 they were entirely assembled and sufficient rivets driven to allow a start to be made on the erection of the bottom chords.

**Placing Bottom Chords.**—According to the scheme of erection, the bottom chords as a whole were erected on the outside staging from main to anchor pier before any of the web members were erected in place. The average main panel length being 86 ft., it was necessary to erect the lower chord members in four pieces for each panel, there being a transverse as well as a longitudinal field splice (both vertical). A full panel of bottom chord near the shoe weighs approximately 400 tons per truss. By Sept. 28 these chords were erected, connected up with the bottom lateral system, and the web splices riveted. The traveler moved back toward the anchor pier as the work progressed.

**Erecting Web Members.**—When the traveler had finished the erection of the bottom chord, it was again moved forward to the main pier and the erection of the lower half of the web members (up to the point where the diagonals and the verticals intersect) was started. These diagonals, also on account of their weight, had to be erected in four pieces between main panel points, having a vertical as well as a longitudinal field splice. As their ends are pin-connected, the erection of this portion of the web system proceeded rapidly. Each diagonal was accurately trued up and all the rivets in the vertical web splices were driven for the connection before it was connected to the vertical. No difficulty whatever was met with in the erection of these members.

The lower half of this web system was fully erected back to the north anchor pier by Nov. 9, 1914. The anchorage bars were then put in place in the anchor pier and connected up to the eye-bar heads, which had been left extending above the masonry at the foot of the well. These bars were carried up and connected to the top of the end compression diagonal, which is held in position by a special steel strut resting on the anchor pier until such time as it receives stress from the weight of the cantilever arm.

The start on the upper portion of the web system, including the top-chord eye-bars, was made on Nov. 12, the traveler moving forward panel by panel toward the main pier as the work progressed. This work went ahead even faster than the lower half of the web system, as the compression verticals were shipped in one length, and very little riveting was required. Although the longer of the tension diagonals were shipped in two pieces, they were riveted together on the ground before they were erected in place, thus saving time in actual erection.

**Top-Chord Eye-Bar Erection.**—The top chords are composed of two banks of eye-bars. On account of the impossibility of getting eye-bars of sufficient length to span a full panel, they are erected in two lengths, supported on the centre by a small lattice truss, thus doing away with redundant members in the web system. The eye-bars are assembled in these trusses in the storage yard, the centre pins driven, and the whole panel of eye-bars erected as a complete member; thus only the end pins need to be driven to fully erect a whole section of the chord. The erection proceeded to panel point 10, or two full panels away from the main pier, where the work ceased for the season on Dec. 5. Owing to the excellent equipment of the erection traveler, the members for both trusses were erected simultaneously, which materially expedited the work.

The erection of one complete panel of the upper section of the web, with all pins driven, was the best single day's work during the season.

The St. Lawrence Bridge Co., of Montreal is the contractor for this work. Phelps Johnson is President; G. H. Duggan, Chief Engineer; George F. Porter, Engineer of Construction; W. B. Fortune, Superintendent of Erection; S. P. Mitchell, Consulting Engineer of Erection.—Engineering News.

At the annual meeting recently of the Dominion Bridge Co., which is largely interested in the St. Lawrence Bridge Co., it was stated that 42% of the steel of the Quebec Bridge had been fabricated and 18% erected. It is anticipated that the work will be finished on time and within the original cost estimates.

**Railway Financial Issues in England in 1914.**—During 1914, Canadian railways placed loans on the London market, aggregating £11,545,000, as follows.—Canadian Northern Ry., 4% guaranteed debenture stock £3,000,000 at 94; Canadian Northern Western Ry., 4½% Alberta guaranteed first mortgage debenture stock, £1,320,000 at 93; Central Ry. of Canada first mortgage 5% bonds, £1,225,000 at 90; Grand Trunk Ry. perpetual 4% consolidated debenture stock, £1,500,000 at 90, and three year 5½% secured notes, £1,000,000 at 98½; Pacific Great Eastern Ry. first mortgage 4½% guaranteed debenture stock, £1,500,000 at 95.

## Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those for 1913-14, from July 1, 1914:

	Gross Earnings	Expenses	Net Earnings	Increase or Decrease
July	\$1,594,300	\$1,163,800	\$430,500	x \$53,800
Aug.	1,367,700	1,123,000	244,700	x 163,900
Sept.	2,109,900	1,519,000	590,700	x 65,800
Oct.	1,895,300	1,332,100	563,200	x 440,900
Nov.	1,670,200	1,123,100	547,100	x 417,700
Dec.	1,329,100	908,000	423,100	200,900
	\$9,966,500	\$7,167,200	\$2,799,300	x \$1,241,400
Decr.	\$3,398,400	\$2,157,000	\$1,241,400	.....

x Decrease.

Approximate earnings for three weeks ended Jan. 21, \$656,600, against \$1,040,700 for same period 1913.

## Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1913-14, from July 1, 1914:

	Gross Earnings	Expenses	Net Earnings	Decrease
July	\$10,481,971.72	\$6,703,525.89	\$3,778,445.83	\$338,947.35
Aug.	8,917,764.38	6,554,606.68	3,373,157.70	597,981.54
Sept.	10,764,139.67	6,387,091.28	4,367,048.39	48,530.30
Oct.	9,282,928.49	5,361,600.13	\$3,921,328.36	2,281,529.48
Nov.	8,057,358.89	5,413,866.72	2,644,072.17	2,244,173.89

	\$48,494,163.15	\$31,020,110.70	\$17,474,052.45	\$5,510,562.51
Dec.	\$14,977,673.21	\$9,467,110.70	\$5,510,562.51	.....

Approximate earnings for Dec., \$7,321,000 against \$11,695,000 for Dec., 1913; and for two weeks ended Jan. 14, \$2,637,000, against \$3,413,000 for same period 1913.

## Grand Trunk Railway Earnings, Etc.

The following figures show the earnings of the G.T.R., G.T.W.R., and D.G.H. & M.R. for Nov., 1914, compared with Nov., 1913:—

Grand Trunk Railway (Including Canada Atlantic Ry.)		
	1914.	1913.
Earnings .....	\$2,953,700	\$3,724,300
Expenses .....	2,551,900	3,028,300
Net earnings .....	\$401,800	\$696,000
Grand Trunk Western Railway.		
Earnings .....	\$576,200	\$557,200
Expenses .....	607,300	502,500
Net earnings .....	\$31,100*	\$74,700
Detroit, Grand Haven & Milwaukee Ry.		
Earnings .....	\$240,400	\$241,900
Expenses .....	227,600	210,200
Net earnings .....	\$12,800	\$31,700

\*Deficit.

## TRAFFIC RECEIPTS OF THE SYSTEM.

Aggregate traffic receipts from July 1 to Dec 31, 1914:—

	1914	1913	Incr.	Decr.
G.T.R. ....	\$21,387,842	\$24,374,136	.....	\$2,986,294
G.T.W.R. ....	3,752,189	3,717,877	\$34,312	.....
D.G.H. & M.R. ....	1,389,801	1,347,427	42,374	.....
Totals ....	\$26,529,832	\$29,439,440	.....	\$2,909,608

Approximate earnings for Dec., \$4,087,967, against \$4,761,352 Dec., 1913; and for two weeks ended Jan. 14, \$1,523,267, against \$1,607,187 for same period 1914.

## Grand Trunk Pacific Railway Earnings.

The approximate earnings of the Prairie Section and Lake Superior Branch, 1,104 miles, for December were \$317,894, against \$554,926 for Dec., 1913. Aggregate earnings for six months ended Dec. 31, \$3,076,890, against \$4,293,114 for the same period 1913.

**C.P.R.'s Algonquin Hotel.**—It is expected that the reconstructed Algonquin Hotel, St. Andrews, N. B., will be ready for occupation June 15. It will contain 220 bedrooms, many with private baths attached. The dining room will be 112x41½ ft.; the general lounge 89½x21½ ft.; and the drawing room 38½x37 ft., with an extension of 21x17½ ft. There will be large verandahs.



## Typical Station on the Quebec Central Railway.

The Quebec Central Ry. has developed a very neat, attractive, and substantial type of standard station, which will be built at the more important points along the line as required. One of the buildings as completed is shown in the accompanying illustration of the station at East Angus, while another is shown in the plan of a station completed recently at Tring Jct. The feature of especial value in connection with these



Typical Station on Quebec Central Railway at East Angus, Que.

stations is that they are built almost entirely of asbestos, the foundations and walls being of asbestos concrete and asbestos blocks, and the roof covered with asbestos shingles, rendering the building almost entirely fireproof, a very desirable feature. It also shows what a substantial and attractive type of building can be made of the asbestos mineral, which is one of the greatest industries of the Province of Quebec, and which is almost entirely located along the Q.C.R. In fact, over 85% of the world's

ing position on the other side of the offices, the general waiting room, 24 ft. square, is located. Adjoining the latter is the baggage room, 16 by 24 ft.

The ticket office has a ticket wicket into both waiting rooms, the wicket being made of ornamental iron, with a balanced sash. It is entered from the general waiting room through a small lobby for trainmen, from which there are small ornamental iron

wickets into both offices. The trainmen's room has a small desk for order books, etc. The stair to the upper floor leads from this small room. The private office to the rear of the ticket office, is entered from the latter through a door connecting the two offices. One corner of the room is cut off for the chimney, while at the rear of the room, on the same side, there is a projection from the women's waiting room for the women's lavatory.

The women's waiting room is entered from

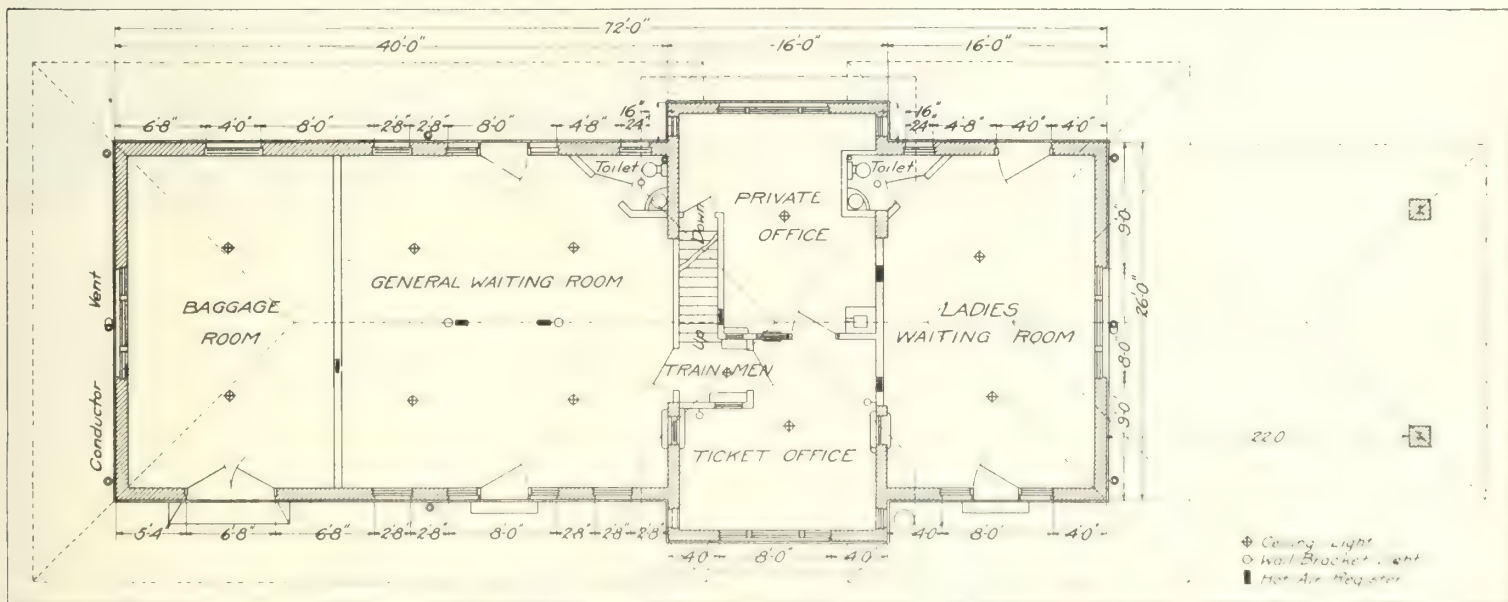
corner to that in the women's waiting room, there is another lavatory.

The baggage room at the end of the building has no connection from the main part of the building, and is entered by a double door, 6 ft. 8 ins. wide, leading out on the train platform. The two waiting rooms and the baggage room have an 8 by 12 in. beam extending over top.

The covered platform at the opposite end of the building is carried on two concrete piers, reinforced with rails, located 22 ft. back from the building wall.

The floor lining in all the rooms is  $\frac{7}{8}$  in. spruce, with a surfacing of clear birch in all but the baggage room, which has a no. 1 birch floor. The general waiting room, women's waiting room, offices and lavatories have ornamental metal ceilings, and the ceiling of the covered section of the end of the station is of  $\frac{7}{8}$  in. tongued and grooved no. 1 spruce sheathing,  $2\frac{1}{2}$  ins. wide, a similar treatment being given to the underside of the overhanging roof all around the building. The baggage room has a similar ceiling. The partition walls are made up of a framing of 2 by 6 in. scantlings at 16 in. centres, while the exterior walls are furred with 2 by  $1\frac{1}{4}$  in. spruce at 16 in. centres. All the rooms are wainscotted to a height of  $4\frac{1}{2}$  ft. Above this, there are applied two coats of asbestic plaster, the second coat of asbestic lime putty with plaster of paris, trowelled to a perfectly smooth surface. There is a single coat of plaster behind the wainscoting.

The outside doors and all sashes are of no. 1 kiln dried pine, and all the frames to the doors and windows are of no. 1 pine or spruce. All the windows have storm sashes attached inside, where the sashes are balanced, with the lower half of the storm sash balanced. All the outside woodwork is painted with three coats of a bottle green lead and oil paint.



Typical Station on Quebec Central Railway at Tring Junction, Que.

production originates on, or is shipped over that line.

The building is symmetrically arranged about the central offices, when the covered platform at one end is included. The building proper is 72 by 26 ft., with projecting wings at the centre giving a width of 32 ft. opposite the offices. The ticket office, 14 ft. square, occupies the front half of the office section, behind which is the private office, 14 by 16 ft. On one side is the ladies' waiting room, 15 by 24 ft., while in a correspond-

the front and rear of the building, through doors at each end of the room. From this room, there is a door leading into a small lavatory, which is located in the back corner, adjoining the private office, into which the lavatory projects.

The general waiting room also has two entering doors, in the front and rear. In the centre line of the room, there are two hard pine columns, all the other rooms being clear, the upper floors being carried on the room walls. In the corresponding

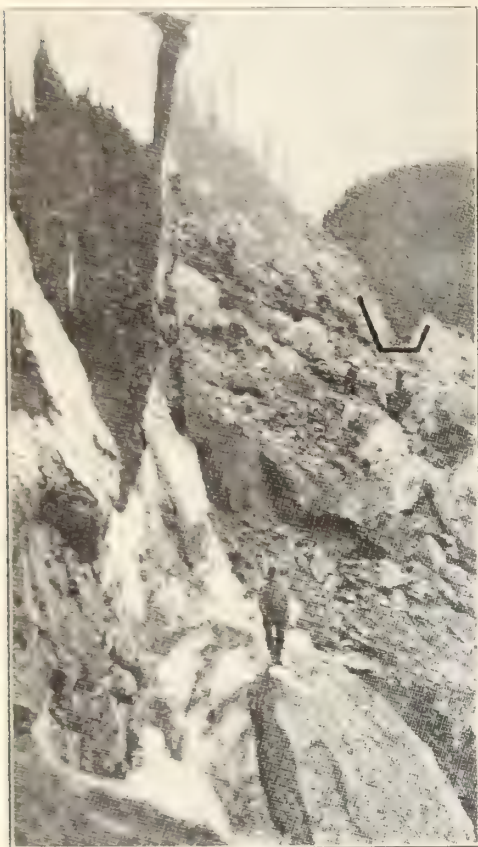
Electric lighting is employed, either in ceiling lights, or wall brackets, all controlled from wall switches, conveniently located beside doors. The heating is by hot air, the ducts passing up in the walls, with wall registers, with the exception of the general waiting room, which has two registers of similar type in the centre of the room. The furnace is in the basement.

We are indebted to J. H. Walsh, General Manager, Q.C.R., for the data from which this article has been prepared.



## Difficulties of Railway Contractors in British Columbia.

The troubles of the railway contractor are ever legion and as varied as they are numerous, yet I believe the construction of the Canadian Northern Pacific Ry. through the canyons on the Fraser and Thompson Riv-



Difficult Sidehill Location, C.N.P.R.

ers presented more new problems than any of the other lines built in the West. The fact that the cost of the 500 miles of the road within the borders of British Columbia averaged about \$75,000 a mile tells only the financial side of the story, and even so, railway builders are agreed that for the low gradients secured this average cost is extremely low.

However, in addition to the engineering questions involved in this work there was also the human side—the side that has to do with keeping crews at work under extreme weather conditions, striving to maintain contentment in a camp to which mail and supplies come only once a month, and encouraging among men on disheartening work the esprit de corps without which the average cost would have been even greater.

The two photographs I am sending here-with may be of interest. The view of the sidehill was taken in the canyon of the North Thompson near Hell's Gate, where solid-rock excavation was continuous for 5 miles. The cut under construction is marked in the background, while the foreground gives a good idea of the character of the country to be traversed. The final location surveys, made along the face of ice covered cliffs of this sort, can be imagined better than described, yet the fatality was surprisingly low.

The other photograph shows a horse being hauled back to the grade by 26 men, after it had fallen some 30 ft. without injury. —K. T. Roberts, Victoria, B. C., in Engineering Record.

## Discussion of the Draft Gear Problem.

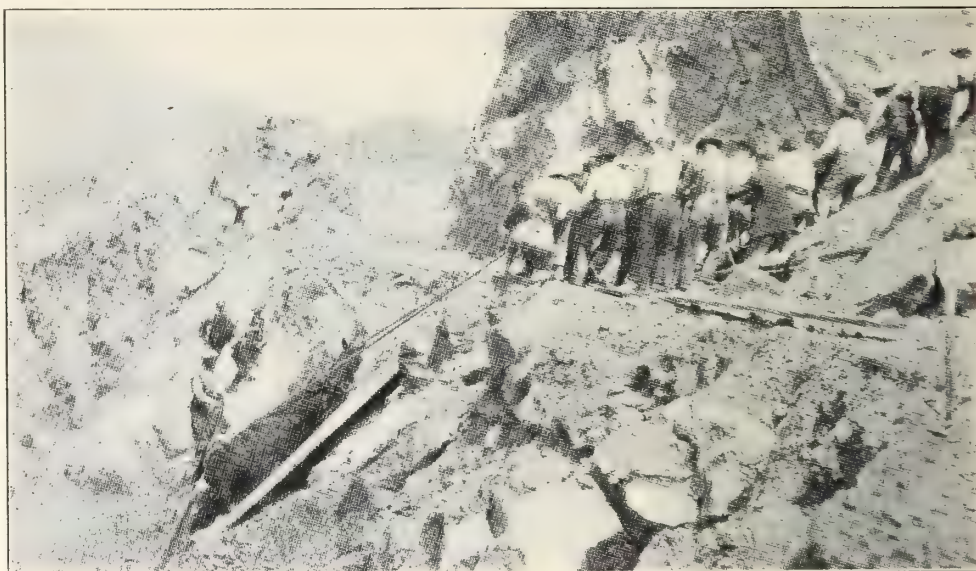
A Montreal subscriber to Canadian Railway and Marine World wrote recently as follows:—"The draft gear problem is certainly the most important item in considering railway freight. The annual cost of repairs to cars that are damaged through draft gear failure, and loss and damage claims resulting from this cause far exceeds all other repairs made to freight car equipment. The draft gear equipment in most of the old cars used in service today is inadequate to withstand the shock incident to the heavy power that is being universally used, and there is only one thing to do, viz., do away with the old and put on the new up to date modern equipment. Draft gear today is manufactured tandem, spring, and friction, and any of these is away ahead of even the most modern car construction. Short draft gear is used today on railways on, say, seven out of ten cars, and it appears that the only reasonable way would be to make as few repairs on these cars as possible and to retire them from service as speedily as economic conditions permit."

We sent a copy of the above to several

arms riveted to same, or steel draft arms so arranged that the plate extends upwards and bolted to the side of the sills, in addition to the regular draft timber bolts now in use in wood under frame cars, and it is very essential that the plate of the draft arm extend back beyond the bolster. There are several types of steel draft arms being used by the different railways, designed to suit their equipment. Repairs to cars through draft sills and gear failure is the largest item we have today in freight car repairs."

W. S. Atwood, Chief Engineer, Canadian Car and Foundry Co., Montreal.—"I believe the writer of this paragraph is quite correct in his statement, in that the draft gear problem is one of the most important items in railway freight car construction, and I believe that his points are well taken, except that I do not quite understand his meaning of the sentence reading 'Draft gear today is manufactured tandem, spring and friction, and any of these is away ahead of even the most modern car construction.'"

Canadian Railway and Marine World sent a copy of Mr. Atwood's letter, as published above, to the subscriber in Montreal who brought up the question, and who has written in reply as follows:—"The gear which



A "One Horsepower Hoist" on the Canadian Northern Pacific Ry.

authorities on car building and maintenance, and have received the following replies:—

J. Coleman, Superintendent, Car Department, G.T.R., Montreal.—"The short article sent you is no doubt all right. Draft gear in freight cars applied several years ago is entirely out of date for the present service on account of the increased size of locomotives and in turn the increased size and length of trains and tonnage, making the service on draft gear a great deal heavier. A serious problem today is, what can be done with old wooden box cars to reinforce them with steel underframe and make them sufficiently strong?"

G. E. Smart, Master Car Builder, Canadian Government Railways, Moncton, N. B.—"The draft gear equipment is not the real source of trouble on freight car equipment at present, it is the wood underframe cars, with the short draft timbers, that are failing under the heavy service of today. These cars, in most cases, are equipped with tandem draft gear, and in some cases the friction draft gear that your correspondent refers to, but it is the short draft timber bolted to the wood sills that is causing the trouble. The remedy for this is to apply steel centre sills, with steel draft

I referred to is manufactured tandem, spring and friction, and can be seen in operation on the New York Central Lines. The noticeable feature is that when cars are damaged, that have been equipped with this modern and up to date draft gear, it is not the gear that is damaged, but the rest of the car. W. O. Thompson, District Master Car Builder, N.Y.C. and H.R. Rd., at Buffalo, can vouch for these facts."

C. P. R. Employees Medical Association of British Columbia.—Following are the officers of the Association for the current year:—President, F. W. Peters; Vice President, G. R. Thomas; Secretary-Treasurer, A. M. Innes; other members of board of management, C. A. Cotterell, W. O. Miller, W. P. Martin, Dr. A. P. Proctor, A. S. Emms, R. B. Urquhart, A. E. Shaw, T. L. Bloomer, O. L. McCrea, F. B. McCharles, A. Robb, R. Winterholder, J. H. Taylor, W. E. Kingston. Of these the following have been elected the Executive Committee:—F. W. Peters, Dr. Proctor, A. L. McCrea, W. Robb, W. G. Kingston. The board has decided to provide free medical attendance for the families of all employees who have enlisted in the military service of Canada for the war.



## Steam Railway Track Laid in 1914.

Following the usual annual custom of many years, circulars were sent in December by Canadian Railway and Marine World to all railways in Canada asking information as to new track built in 1914. From the replies received and estimates made a table was given in our January issue showing 2,088.09, a figure which did not agree with the total in the table. The errors have been adjusted, and with revised official information, except in three instances, the table shows that 2,041.31 miles of new single track were laid in 1914, as follows:

	Miles.	Miles.
<b>Alberta and Great Waterways Ry.</b>		
Carbondale to Lac La Biche .....	114.00	
<b>Canadian Northern Ontario Ry.</b>		
Between Montreal and Grenville .....	39.00	
Between Ottawa and Capreol .....	130.00	169.00
<b>Canadian Northern Ry.</b>		
Birds Hill to Pt. Grand		
Marias, Man. ....	50.77	
Chatfield, Man., northerly ..	27.08	
Laird, Sask., northerly ..	8.67	
C. N. A. Ry., Yellowhead easterly .....	2.48	
C. N. Western, Stolberg-Brazeau .....	17.44	106.44
<b>Canadian Northern Pacific Ry.</b>		
Yellowhead Pass westerly ..	94.40	
Waterfall to Spatum .....	43.00	
Kamloops W. to Upper Black Canyon .....	52.00	
Irvine to near Goose Creek ..	44.00	233.40
<b>Canadian Pacific Ry.</b>		
Quebec—		
Porsyth St. branch, Montreal .....	0.64	
Interprovincial and James Bay Ry., mileage 7.5 to 9.87 Keweenaw north .....	2.37	
Ontario—		
Trenton freight spur .....	1.11	
Manitoba—		
Gimli to Riverton .....	26.30	
Saskatchewan—		
Weyburn-Lethbridge line ..	87.00	
Moose Jaw South West line	22.40	
Kerrobart to Sask. boundary .....	50.00	
Alberta—		
Monitor to Alberta-Sask. boundary .....	22.00	
Empress to Westerham ..	18.00	
Empress to Bassano .....	118.30	
Suffield S. W., m. 57 to 84 ..	27.00	
Coronation to Lorraine ..	18.70	
Gleichen to Shepard .....	12.50	
Alberta Central Ry. between Red Deer and m. 64.50 ..	32.00	
British Columbia—		
Kootenay Central Ry., Edgewater to Kootenay River ..	68.30	506.82
<b>Dominion Atlantic Ry.</b>		
Centerville to Weston, N.S. ....	14.80	
<b>Edmonton, Dunvegan and B.C. Ry.</b>		
Smith to McLennan .....	131.00	
<b>Erie and Ontario Ry. (T., H. &amp; B. R.).</b>		
Smithville to Dunville, Ont. & ..	14.90	
<b>Esquimalt and Nanaimo Ry.</b>		
Big Qualicum to Courtenay, B.C. ....	28.70	
<b>Essex Terminal Ry.</b>		
Extension to Ojibway, Ont. ....	1.00	
<b>Glengarry and Stormont Ry.</b>		
St. Polycarpe, Que., to Cornwall, Ont. ....	28.00	
<b>Grand Trunk Pacific Ry.</b>		
Shelley to Tintagel, B.C. ....	157.30	
Talmage to Weyburn, Sask. ....	14.50	
Central Butte to Riverhurst, Sask. ....	17.60	
Rossman to Carruthers, Sask. ....	15.80	205.20
<b>Hudson Bay Ry. (Dominion Government)</b>		
Mileage 86 to 197 .....	111.00	
<b>Intercolonial Ry.</b>		
Dartmouth Branch Line .....	33.00	
* Kettle Valley Lines .....	60.00	
Extensions .....		
<b>Lake Erie and Northern Ry.</b>		
Brantford to Galt, Ont. ....	22.00	
Waterford towards Simcoe ..	8.00	30.00
<b>* Pacific Great Eastern Ry.</b>		
Mileage 13.50 from Squamish, B.C., to m. 120 .....	106.00	
<b>* Prince Edward Island Ry.</b>		
Carleton Point spur .....	2.50	
<b>Quebec Central Ry.</b>		
Extension east of St. Camille, Que. ....	5.00	
<b>Roberval-Saguenay Ry.</b>		
Extension St. Alexis branch ..	0.50	

<b>St. John and Quebec Ry.</b>	
Fredericton to Woodstock, N.B. ....	24.98
Fredericton to Gagetown ..	3.51
Woodstock to Centreville ..	1.50
	29.99
<b>Vancouver, Victoria and Eastern Ry.</b>	
Coalmount to Brooks, B.C. ....	25.56
<b>Winnipeg Water District.</b>	
St. Boniface to Shoal Lake, Man. ....	85.00
Total .....	2,041.31
* Estimated.	

Of the total mileage laid in 1914 the Canadian Northern Ry. lines laid 508.84 miles; the Canadian Pacific Ry., 506.62, and the Grand Trunk Pacific Ry., 205.20 miles, or a total of 1,222.66 against 2,710.51 miles in 1913 and 1,864.07 miles in 1912.

Divided by provinces the track laid in 1913 and 1914 compares as follows:

	1914.	1913.
British Columbia .....	679.26	655.32
Alberta .....	513.12	511.51
Manitoba .....	300.15	221.88
Saskatchewan .....	215.97	765.49
Ontario .....	200.01	840.57
Quebec .....	52.51	103.26
Nova Scotia .....	47.80	12.80
New Brunswick .....	29.99	107.84
Prince Edward Island .....	2.50	.....
	2,041.31	3,218.67

Following are the figures showing new single track laid from 1906:

	Miles.
1906 .....	1,204.06
1907 .....	1,469.65
1908 .....	1,505.95
1909 .....	1,588.47
1910 .....	1,869.24
1911 .....	1,851.98
1912 .....	2,179.09
1913 .....	3,218.67
1914 .....	2,041.31

The C.P.R. built during 1914, on the Lake Superior Division, 21 miles of double track diversion to replace an approximately equal mileage of old second track. This is located as follows:—Cartier Subdivision, mileage 101 to 107, six miles; Schriber Subdivision, mileage 3 to 7, four miles; mileage 9 to 11, two miles; mileage 21 to 22, one mile; Nipigon Subdivision, mileage 14 to 22, eight miles; total, 21 miles. New second track was laid as follows:—Cartier Subdivision, mileage 95.5 to 100, 4.5 miles, and mileage 110 to 113, three miles; Chappleau Subdivisions, mileage 125 to 129, four miles; White River Subdivision, mileage 29 to 30, one mile, and mileage 33 to 38, five miles.

The Canadian Northern Ry. has, in addition to the completed grade on the transcontinental line to Vancouver, on which track is expected to be laid in about a month, 155.25 miles of grading practically ready for the track on Vancouver Island, in addition to a considerable mileage of branch mile grading in Saskatchewan and Alberta.

The Lancashire & Yorkshire Ry. Chief Goods Manager's staff has made it a custom for 20 years to hold an annual dinner at the company's head office at Manchester, Eng., but this year, on account of the war, it was not thought desirable to do so. Instead, the staff entertained about 150 Belgian refugees to a dinner and concert, the guests being called for, and taken home by motor cars. The invitations were printed in English, Flemish and French, and the chief speech of the evening was translated into the two latter languages.

The Intercolonial Ry. Ticket Office at St. John, N.B., has been removed from its old quarters at the foot of King St. to the offices formerly held by the C.P.R. in the Royal Hotel, at the corner of King and Germain Sts.

## The Late Thomas C. Keefer.

The death occurred at Ottawa, Jan. 7, of T. C. Keefer, the father of the engineering profession in Canada. He was born at Thorold, Ont., Nov. 4, 1821, and was educated at St. Catharines, Ont., Upper Canada College, Toronto, and McGill University, Montreal. He commenced his engineering career on the Erie and Welland canals in 1838, and continued as an engineer on that work until 1845. From 1845 to 1848, he was Chief Engineer of the work in connection with the improvement of navigation on the Ottawa River, and later was engaged in survey work for the navigation of the rapids on the St. Lawrence River. In 1850 he was sent by the Canadian Government to assist a U. S. representative to report on Canadian trade with the U. S., and he also assisted in preparing a second report on the same subject. In 1851 he was engaged on preliminary surveys for the G. T. R. between Montreal and Toronto, and for a railway bridge over the St. Lawrence River at Montreal. In 1853 he was appointed Engineer for the Montreal Harbor Commissioners, and later constructed water works for Montreal, Hamilton and Ottawa, and was for some time Chief Engineer of various railways in Upper and Lower Canada, since amalgamated with the larger systems. He was also appointed a member of the International Commission of Waterways. He was made an honorary member of the Canadian Society of Civil Engineers in 1903, and was one of its founders and its first President. He was also a member of the American Society of Civil Engineers, Institute of Civil Engineers (England), and the Royal Society of Canada. He was created a Companion of the Order of St. Michael and St. George in 1878, and was also made a member of the Legion of Honor, of France, in the same year.

He produced a number of works, treating of transportation in the Dominion, issuing his Philosophy of Railways in 1849, which, it is stated, greatly influenced the Government in its railway policy. In 1850 he won the then Governor General's prize for an essay on the influence of the canals of Canada on her agriculture.

## Railways and the Ontario Workmen's Compensation Act.

Representatives of a number of steam and electric railways operating in Ontario met the members of the Ontario Workmen's Compensation Board in Toronto, Jan. 15, to discuss the operation of the Act as applying to railways. The Board pointed out that the railways are in schedule 1 of the Act, which means that while they are under the general provisions of the measure, they are not brought within the grouping system, each company being held individually liable for its dependents in case of injury or death.

When a workman is injured or killed, the company must at once notify the Board, supplying a physician's report and other data. The Board passes upon the case, fixes the compensation due the workman and notifies the company. A cheque for the amount fixed must then be forwarded to the Board, which places it upon record and sends it on to the workman.

In every respect the employe of a railway is given the same protection and compensation that the worker under the general scheme receives, the only difference being that he gets his compensation from his employer instead of from a general fund.

The Canadian Northern Ry. was reported Jan. 9, to have sold \$2,000,000 of equipment trust notes in New York.



## Railway Development.

### Projected Lines, Surveys, Construction, Betterments, Etc.

**Alaska.**—A proposition has been submitted to the United States Government for the sale to it of the Copper River and Northwestern Ry., with a view of its inclusion in the projected Government system of railways in Alaska. The Government's engineering commission is making a valuation of the Alaska Northern Ry., and will make a valuation of the C. R. and N. W. Ry. later. The Government project looks to the building of a railway from the Pacific Coast through the centre of the Territory to the Yukon River, at the boundary of British Columbia. (Sept., 1914, pg. 418.)

**Alberta and Great Waterways Ry.**—Press reports stated that grading had been completed Dec. 20, from Carbondale, the junction with the Edmonton, Dunvegan and British Columbia Ry. to mileage 137, about 23 miles beyond the Hudson's Bay reserve at Lac La Biche, and that tracklaying had practically reached the lake. The right of way beyond mileage 137 is being cleared, and grading will be proceeded with during the summer. Location surveys are practically completed to Clearwater River, mileage 310, about seven miles above Fort McMurray. It is expected to have track laid to that point this year. (Jan., pg. 10.)

**Athabasca, Grand Prairie and Peace River Ry.**—The Dominion Parliament is being asked to authorize the building of the following lines:—From Brule Lake, Alberta, on the Grand Trunk Pacific Ry. main line north easterly to Grand Prairie, thence north westerly to a junction with the Pacific Great Eastern Ry., at the boundary between Alberta and British Columbia; from Grand Prairie northerly to the Peace River at the point where the Pacific, Peace River and Athabasca Ry. proposes to cross. The length of the two lines is approximately 400 miles. Pringle, Thomson, Burgess and Cote, Ottawa, solicitors for applicants. (See Athabasca and Grand Prairie Ry., Nov., 1914, pg. 500.)

**British Columbia and White River Ry.**—Application is being made to the Dominion Parliament for an extension of time for the construction of the projected railway from Bear Creek, at the mouth of the Chilkat River, B.C., to the White River, and then on to the boundary between Yukon and Alaska. C. M. Marpole, G. E. Wilson, G. E. MacDonald, A. McDonnell, Jas. Ironside, are the provisional directors. The company was incorporated in 1911. Barnard, McKeown and Choquette, Montreal, solicitors for applicants. (July, 1911, pg. 645.)

**Brule, Grand Prairie and Peace River Ry.**—The Dominion Parliament is being asked to incorporate a company with this title to build a railway from Brule Lake, Alberta, on the G.T. Pacific Ry. and the Canadian Northern Ry., to Grand Prairie, thence to the boundary between Alberta and British Columbia, there connecting with the Pacific Great Eastern Ry.; also a line from Grand Prairie to the crossing of the Montagneuse River by the Pacific, Peace River and Athabasca Ry., and on to the Peace River at Dunvegan; in all about 400 miles. Pringle, Thomson, Burgess and Cote, Ottawa, solicitors for applicants.

**Burrard Inlet Tunnel and Bridge Co.**—The British Columbia Government informed the company, Dec. 23, 1914, that it was not prepared to endorse either of the three plans under consideration for the projected bridge across the Second Narrows of Burrard Inlet, Vancouver. The directors held a meeting, Dec. 24, when it was decided to

ask Vancouver City to raise its contribution to the total amount to be contributed by the municipalities on the opposite side of the Inlet, and to ask the Provincial Government to guarantee a sufficient amount of the company's bonds to permit the letting of a contract for the substructure, pending the settlement of the question of superstructure plans. A large section of the directors favor the Canadian Bridge Co.'s design, but the Vancouver city directors desire to have the superstructure manufactured in Vancouver and erected by a Vancouver contractor. Further consideration of the question was postponed. (Jan., pg. 10.)

**Calgary and Fernie Ry.**—The Dominion Parliament is being asked to extend the time for the building of this projected railway from Calgary, Alberta, to Fernie, B.C. Hough, Campbell and Ferguson, Winnipeg, Man., solicitors for applicants. (Aug., 1914, pg. 371.)

**Canadian Western Ry.**—The Dominion Parliament is being asked to extend the time for the building of this projected railway from the International Boundary through Pincher Creek and Cowley, and along the Old Man River, to the Livingstone Mountains, thence to Calgary, Alta., with a branch from the Livingstone Mountains to Michel, B.C. The company was incorporated in 1909, the provisional directors being J. S. Hough, L. L. Metcalfe, A. S. Kildall, H. J. Box, and O. L. Boynton, Winnipeg. Hough, Campbell and Ferguson, Winnipeg, are solicitors for the applicants.

**The Cape Breton Coal, Iron and Ry. Co.** closed down its coal mine at Broughton, N.S., Jan. 17. The mine was only reopened a year ago, after having been idle for several years. The company owns a railway from the colliery to a junction with the Sydney and Louisburg Ry., 3 miles, and in 1913 graded a 3 mile extension to Mira, on which track has not been laid. The President is H. Mayhew, Chester, Eng., and the only Canadian director is W. Hanson, Montreal. (Dec., 1913, pg. 573.)

**Central Canada Ry.**—Press reports state that tracklaying has been started at McLennan, Alta., on the Edmonton, Dunvegan and British Columbia Ry., on the 28 miles of grading completed on this line. On the completion of this tracklaying supplies will be got in for the grading of the 22 miles between track end and Peace River Crossing. The construction on the first 8 miles of this will be average, but heavy on the other 14. The route follows the valley of the Heart River, which drops 700 ft. to the Peace River, in the 22 miles. The stream is not a large one, but is subject to high floods, and it has been found impossible to arrange a grade on a side hill cut. In order to establish a satisfactory roadbed the stream will, it is said, be crossed 58 times in 18 miles. The ruling gradient is 1.3%. The grading and track laying on the 22 miles is estimated at \$87,000 a mile, and the cost of the steel for the bridges \$750,000. The bridge required for the crossing of the Peace River will be 1,800 ft. long, 80 ft. above low water, with a 2,500 ft. trestle approach on the east side. This bridge is estimated to cost \$800,000. Beyond the river prairie country stretches for over 200 miles, through which it is proposed ultimately to extend the railway. (Dec., 1914, pg. 544.)

**Dominion Atlantic Ry.**—The Board of Railway Commissioners has approved plans for the deviation of the main line in Windsor, N. S., for 3,250 ft. (Sept., 1914, pg. 418.)

**Dominion Government Railway to Hudson Bay.**—J. D. McArthur, the contractor for building this railway, and — MacLachlan, his engineer, arrived in Ottawa, Jan. 12, from Pas, Man. Mr. McArthur is reported as stating that when he left, track had been laid to mileage 200 from Pas, and that in all 300 miles of grading had been completed. The grading would, he expected, be completed right through to Hudson Bay, by the end of this year, and the track laid by the summer of 1916. (Jan., 1914, pg. 10.)

**Edmonton, Dunvegan and British Columbia Ry.**—Application is being made to the Dominion Parliament for an extension of time for the building of the line now under construction from Edmonton to Dunvegan, and the Alberta-British Columbia boundary. Tracklaying has been completed to McLennan, mileage 245 from Edmonton, where a divisional point is to be laid out, and where the Central Canada Ry. branches off. Grading is reported finished from McLennan to the east bank of the Smoky River, and it is expected to have track laid to that point early in March. Subcontracts are reported let for grading from the west bank of Smoky River to Spirit River, mileage 360. It is expected to have this grading done during the summer and the track laid by the end of the year. (Jan., pg. 10.)

**The Erie and Ontario Ry.** from Smithville to Dunnville, Ont., 14.9 miles, was officially opened for traffic, Dec. 23, when a special Toronto, Hamilton and Buffalo Ry. train was run over it from Hamilton. The official party was entertained at luncheon at Dunnville, by the Mayor, and J. N. Beckley, President T. H. and B. Ry., in speaking referred to the negotiations which led to his company undertaking six months ago to build the road. The promise to have the line in operation by Jan. 1, had been kept, and it was now the duty of the Dunnville people to keep the promise made to supply traffic. The line would be carried through to Port Maitland, and as the traffic warranted it, docks would be built there, and additional facilities for traffic provided along the line. Three trains a day each way are being run.

The Board of Railway Commissioners has approved of location plans of the line from Dunnville to Port Maitland, 4.58 miles. It is expected that this will be built during the summer. (Jan., pg. 10.)

**Intercolonial Ry.**—We are officially advised that no track has been laid on the piece of line being built to the new ocean terminals at Halifax, N.S.

In connection with the Dartmouth branch line, under construction into the Musquodoboit district we are advised that it starts at the terminus of the branch line running from Windsor Jct., through Dartmouth to Woodside. Track had been laid for 33 miles at Dec. 31, 1914, and it is expected that the track laying gang would reach about mileage 53, or three miles beyond Elderbank by Jan. 30. A train service is being operated on the line by the sub-contractors, Cavicchi and Pagano. W. A. Hendry, Dartmouth, is engineer in charge of construction for the Railways and Canals Department. (Jan., pg. 10.)

**Kettle Valley Lines.**—Application is being made to the Dominion Parliament by the Kettle Valley Ry., for an extension of time for building the following lines:—From Summer Creek or One Mile Creek to Copper Mountain and Voigt Mining Camps; from Vernon via Kelowna to Penticton; branch to Otter Summit; from Tulameen for 50 miles up the Tulameen River valley; from Penticton to Osoyoos Lake; from Summer Creek to Alliston or Princeton, thence to Granite Creek coal areas; from Grand Forks for 50 miles up the North Fork of the Kettle River; from Midway to Hedley; from



Penticton to Nicola. Parliament is also asked to ratify an agreement entered into with the Vancouver, Victoria and Eastern Ry. and Navigation Co. respecting the joint section of the main line between Princeton and Otter Summit, B.C.

The Board of Railway Commissioners has authorized the company to connect its tracks with those of the Vancouver, Victoria and Eastern Ry., at Hope, B.C.

The Kettle Valley Ry. has entered into a contract with the Dominion Government, under the act granting aid in the construction of railways, for the building of a railway bridge, under subsidy, over the Fraser River, at or near Hope, B.C. (Dec., 1914, pg. 544.)

**Lake Erie and Northern Ry.**—W. P. Kellett, Chief Engineer, is reported to have said that nothing has been settled as to the opening of the section of the line between Brantford and Galt, Ont., and that it certainly will not be opened Feb. 1. Press reports, Jan. 12, stated that work on the construction of the line in Brantford and in the direction of Port Dover was to be proceeded with at once. This includes a bridge in Brantford and another in Simcoe. (Dec., 1914, pg. 544.)

**Northern Pacific and British Columbia Ry.**—Seattle, Wash., and Vancouver, B.C., press reports state that the application being made to the Dominion Parliament for the incorporation of a company with this title is on behalf of the Northern Pacific Ry. The N. P. R.'s line to Huntingdon has been extensively improved in preparation for the company's direct traffic entrance into Vancouver. Grades and embankments have been improved, new bridges have been built, and heavier steel laid. An order for new rolling stock has been placed for delivery early this year. Entrance to Vancouver will be obtained over the Vancouver, Victoria and Eastern Ry. to the False Creek terminals which are being laid out by the Great Northern Ry. for joint use with the N.P.R. At present the N.P.R. has a traffic agreement with the C.P.R., which is nearing expiration. (Dec., 1914, pg. 544.)

**Pacific Great Eastern Ry.**—A train service is being operated from Squamish, B.C., to the head of Anderson's Lake, 89 miles, about 33 miles from Lillooet. It is expected that it will be possible to operate trains into Lillooet, by Mar. 1.

F. C. Gamble, Chief Engineer of the Provincial Department of Railways, returned to Vancouver, Jan. 9, after making a trip of inspection over the line to the track end. (Jan., pg. 10.)

**St. John and Quebec Ry.**—We are officially advised that the Intercolonial Ry. is operating its trains over the section of the St. J. and Q. R. from Fredericton to Centreville, N.B., 88.2 miles. A mixed train is run daily, except Sundays, leaving Centreville 6.15 a.m., arriving at Fredericton, 11.10 a.m., and returning leaves Fredericton at 4.30 p.m., reaching Centreville, 9.30 p.m. The line is also completed and ready for operation from Fredericton, southerly to Gagetown, 33 miles. Negotiations are in progress for the taking over of this section by the Intercolonial Ry. for operation. The entire line in New Brunswick is to be operated by the Intercolonial, under an agreement. (Dec., 1914, pg. 544.)

**Southern Central Pacific Ry.**—The Dominion Parliament is being asked to extend the time for the building of this projected railway from Vancouver via Kootenay Pass and the Old Man River and on to Hudson Bay at least 100 miles north of Fort Churchill, with branch lines from the Blindman River, Sask., via Dunvegan to the Pacific coast at Gardner's canal, and from the Elk River, B.C., to the Intercolonial boundary at Milk River. The following were named provisional directors in an amending act of 1913: G. F. McDonnell, A. E. Honeywell, W. N. Graham, J. C. Dingman, K. P. Young, Ottawa. McDonnell and Honeywell, Ottawa, are solicitors for the applicants. (May, 1913, pg. 220.)

**Toronto, Hamilton and Buffalo Ry.**—The Hamilton, Ont., City Council, Jan. 4, authorized City Engineer Macallum to attend a conference at Ottawa, Jan. 11, when the

question of the depression of the T. H. and B. Ry. tracks was to be discussed with the Chief Engineer of the Board of Railway Commissioners. W. F. Tye, Toronto, is consulting engineer for the city council in connection with the matter. (June, 1914, pg. 267.)

**Van Buren Bridge Co.**—The Dominion Parliament is being asked to authorize the company to subject its property and assets constructed or acquired in Canada to the lien or charge of a mortgage dated Sept. 1, 1914, to secure its bonds to the amount of \$250,000; to confirm and declare valid such mortgage to the United States Mortgage and Trust Co., and to authorize the registration of the mortgage in Canada. The company is building a railway and general traffic bridge between St. Leonards, N.B., and Van Buren, Maine. The bridge was originally projected to be built by the International Ry. of New Brunswick, which is now part of the Intercolonial Ry. system. (Oct., 1914, pg. 468.)

**Vancouver Terminal Ry.**—The Dominion Parliament is being asked to incorporate a company with this title to construct and lay out railway and terminal works, tunnels, and transfer and connecting tracks and other railways in Vancouver, New Westminster, and at the mouth of the Fraser River, B.C. J. B. Noble, Vancouver, B.C., solicitor for applicants. Parliament was asked to incorporate a similar company in 1914, under the title of the Vancouver Ry. and Ocean Terminal Co., but the bill was withdrawn, April 30. (June, 1914, pg. 268.)

**Winnipeg, Man.**—The Commissioners of the Greater Winnipeg Water District at a meeting Jan. 15, were authorized to advertise for from 8,000 to 12,000 tons of coal for use on its railway. It was reported that track laying on the 85 miles was completed Dec. 10, and that practically the whole of the ballasting has been completed. The contract for digging a navigable channel from Indian Bay to Snowshoe Bay, was let to C. J. Anderson, Kenora, Ont., at an estimated cost of \$12,765. (Jan., pg. 11.)



Concrete Decoration on the Canadian Pacific Railway, near Hamilton, Ont.

With the object of creating something in Canada corresponding to the famous Whiteleaf Cross in Buckinghamshire, Eng., W. Murphy, section foreman on the C.P.R. spur line at Hamilton, Ont., has built the concrete decoration illustrated above, on the side of a hill on the right of way, a quarter of a mile from Grant Jct., Hamilton, representing among other things the C.P.R. beaver trade mark, the representation of the animal measuring 7 ft. in length.



## Mainly About Railway People.

**W. D. Reid**, President, Reid Newfoundland Co., St. John's, Nfld., was in Montreal for the Christmas holidays.

**Henry and C. J. Goldmark** have opened an office as consulting engineers at 103 Park Ave., New York, N.Y.

**D. B. Hanna**, Third Vice President, Canadian Northern Ry., Toronto, has been appointed an honorary colonel.

**F. P. Gutelius**, M.Can.Soc.C.E., General Manager, Canadian Government Railways, Moncton, N.B., has returned from a short holiday at Pinehurst, N.C.

**Miss Kathleen Dunsmuir**, daughter of **James Dunsmuir**, director, C. P. R., left Canada for England recently to train as a nurse preparatory to acting at the front.

**Sir Robt. Turnbull, M. V. O.**, formerly General Manager, London & North Western Ry., (England) has been elected a director of the company.

**J. Madill**, City Passenger Agent, Canadian Northern Ry., Edmonton, Alta., is in the east on two months leave of absence, for reasons of health.

**J. Stewart**, of Foley Welch and Stewart, railway contractors, returned to Canada at the end of December, after spending some time in Great Britain.

**J. R. W. Ambrose, M. Can. Soc. C.E.** Chief Engineer, Toronto Terminal Co., Toronto, has been elected Chairman of the Toronto Branch of the Canadian Society of Civil Engineers.

**Sir Wm. Mackenzie's** son-in-law, Count Jacques de Lesseps, is on active service in the French army's aviation corps. The Countess and her children are in Paris with the Count and Countess Paul de Lesseps.

**D. Pottinger, I. S. O.**, ex Assistant Chairman, Canadian Government Railways Managing Board, and Mrs. Pottinger, returned from England recently, and are spending the winter at Ottawa.

**Nicholas Bawlf**, who died at Winnipeg at the end of December, was connected with a number of grain elevator companies in the west, and was President of the Winnipeg Grain Exchange in 1890.

**G. McLaren Brown**, European Manager, C. P. R., and **F. C. Salter**, European Traffic Manager, G. T. R., London, Eng., have been elected directors of the recently inaugurated Institute of Industry and Commerce.

**R. F. Cobbe**y, who was mentioned recently for gallant work in dispatch riding in France, is a nephew of **F. W. Peters**, General Superintendent, British Columbia Division, C. P. R., Vancouver.

**E. C. Meyers**, a former Secretary of the Kettle River Valley Ry. Co., committed suicide by shooting, in the C. P. R. station at Penticton, B. C., Jan. 4. He was under remand on a charge of shooting, and was to come up for trial Jan. 13.

**D. McNicoll**, Director, C. P. R., who, since his retirement from the Vice Presidency of the company, is learning golf at Hot Springs, Va., was presented by Vice President Odgen with a set of golf clubs, before leaving Montreal.

**E. A. Humphrey**, heretofore Assistant Electrical Engineer, Great Northern Ry., St. Paul, Minn., has been appointed Electrical Engineer, succeeding **C. L. Daugherty**, who has gone to the St. Petersburg, (Fla.) Light & Power Co.

**Sidney P. Howard**, formerly General Freight Agent, C. P. R., Montreal, has been awarded \$80,000 damages against John Findlay, his former partner in the real estate

firm of Findlay and Howard, who terminated the partnership suddenly.

**Frederic Nicholls**, President, Canadian General Electric Co., Vice President, Toronto Railway, and director, Canadian Northern Ry., has been elected a director of the Confederation Life Association, to succeed the late Sir Wm. Whyte.

**R. Marpole**, General Executive Assistant, C.P.R., Vancouver, B. C., has, as reported in a press cablegram from London, sent, at his own expense, 20 fully equipped recruits for the Welsh army corps which is being raised in Wales.

**A. A. Heard**, heretofore General Passenger Agent, Delaware and Hudson Co., Albany, N.Y., who resigned recently, has been appointed Sales Agent for the Saratoga Springs State Waters, which are owned and controlled by New York State.

**A. W. Wheatley**, General Manager, Canadian Locomotive Co., left Kingston, Ont.,



**C. E. Stockdill**, Assistant to Vice President and General Manager, Western Lines, Canadian Pacific Railway.

Jan. 19, for Russia, in the hope of securing orders for locomotives and shrapnel shells for the Russian Government. It is expected that he will be away about four months.

**Mrs. H. E. Whittenberger**, wife of the General Superintendent, Ontario Lines, G. T. R., Toronto, shipped a consignment of clothing recently for Canadian soldiers at the front and for Belgian refugees, the same having been contributed by wives of G. T. R. officials at Toronto and Barrie.

**Lieutenant-Colonel G. S. Cantlie**, General Superintendent of Car Service, C. P. R., Montreal, has been granted extended leave of absence, in connection with his military duties concerning the third contingent of the Canadian expeditionary force, now recruiting.

**Westrop Armstrong**, formerly of Mackenzie, Mann & Co.'s engineering staff, and latterly on the Toronto, Hamilton & Buffalo Ry.'s engineering staff for the construction of the Erie and Ontario Ry., has been

appointed Engineer of Bridges for the Toronto-Hamilton Highway Commission.

**R. H. Aishton**, heretofore Vice President, (operation) Chicago and North Western Ry., has been appointed by the President of the United States to fill the vacancy in the Federal Industrial Relations Commission, caused by the appointment of **F. A. Delano**, of Chicago, to the Federal Reserve Board.

**Lt.-Col. H. S. Greenwood**, formerly Assistant Chief Engineer, Mackenzie, Mann & Co., Toronto, is now attached to the Royal Engineers in England with the rank of major. His son, **Lt. Eric Greenwood**, who is also in the Royal Engineers, was wounded recently while at the front, and has had a leg amputated.

**James Man** on, who was Assistant to the Vice President, C. P. R., Winnipeg, with the late Sir William Whyte, as well as George Bury, was entertained to dinner at Winnipeg, towards the end of December, by the local staff, on leaving for Montreal, where he accompanied Vice President Bury, to act in a similar capacity.

**Archibald McDonald**, the last of the chief factors of the Hudson Bay Co., who died at Fort Qu'Appelle, Sask., Jan. 6, aged 79, started business life as a booking clerk on the old Edinburgh, Perth and Dundee Ry., in Scotland, and left there in 1854 to enter the H. B. C. service, from which he retired in 1913.

**F. M. Lawledge**, a divisional engineer on the Dominion Government railway to Hudson Bay, who went to England in Aug. 1914, on leave, being due to return in November, is reported to be missing. He appears to have registered at one of the Canadian newspaper offices in London, but has not been heard of since, nor was he known at the address given by him when registering.

**D'Alton C. Coleman**, Assistant General Manager, Western Lines, C. P. R., was entertained to a dinner at the Hotel Palliser, Calgary, Alta., at the end of December, by a few friends, on leaving Calgary, where he had been General Superintendent, Alberta Division, C. P. R., to assume his new duties at Winnipeg. He was presented with a cigarette case, and with a jewel box for Mrs. Coleman.

**Abraham T. Hardin**, who has been appointed Vice President, New York Central Rd., in charge of the Operating Department, New York, is a graduate in civil engineering of the University of South Carolina, and commenced his railway career as a telegraph operator on the Richmond and Danville Rd., becoming an agent and stenographer with that company. After graduation he spent four years with the Southern Ry., and in 1898 was appointed Supervisor and Division Engineer, Eastern Division, New York Central and Hudson River Rd.

**Col. Herbert C. Nanton, R. E.**, who has latterly occupied the position of Deputy Director General of Military Works at Simla, India, has been attached to the headquarters of the British Expeditionary Forces in France as Colonel and temporary Brigadier-General. He is a brother of **A. M. Nanton**, director, C. P. R., Winnipeg, and was born at Toronto in 1863. He graduated from the Royal Military College, Kingston, Ont., in 1883, and saw service in the Northwest Rebellion in 1885, the Lushai Expedition in 1888-89, the Chitral Expedition in 1895, and in the South African war 1899-1901, when he took part in the relief of Kimberley and was mentioned in dispatches. He married a daughter of the late Sir Henri Joli de Lotbiniere, of Quebec.

**Edward J. Guthrie**, who has been appointed Superintendent, Southern Division, Central Vermont Ry., and Central Vermont Transportation Co., New London, Conn., was



born at Erie, Ont., Mar. 1, 1866, and entered railway service, Oct. 1, 1889, as switchman, G. T. R., remaining in that position for a year and a half. He was afterward telegraph operator for nine years, agent G.T.R. at various points for nine and a half years, and in 1907 was appointed Freight Agent, Central Vermont Ry., at St. Albans, Vt. Later in the same year he was transferred to Palmer, Mass., and subsequently to Brattleboro, Vt. He was afterward appointed General Agent, C. V. R., at New London, Conn., and four months later was transferred to New York as Agent of pier 29, East River.

**William Allan Mather**, whose appointment as Superintendent, District 1, Alberta Division, C.P.R., Medicine Hat, was announced in our last issue, was born at Oshawa, Ont., Sept., 1885; graduated B.Sc., McGill University, 1908, and entered C.P.R. service in May, 1903, since when his railway record has been:—May to Aug., 1903, axeman, Rush Lake, Ont.; Apr. to Aug., 1905, tapeman, Deception, Ont.; Apr. to Aug., 1906, rodman, Deception, Ont.; Apr. 21 to Dec. 19, 1908, instrumentman, Deception, Ont.; Apr. 1 to Oct. 1, 1909, instrumentman, Kenora, Ont.; Oct. 1, 1909, to Jan. 1, 1910, transitman, Laggan, B.C.; Mar. 15, 1910, to Mar. 1, 1912, Resident Engineer, Winnipeg and Portage la Prairie, Man.; Mar. 1, 1912, to Jan. 1, 1913, acting Superintendent, Kenora, Ont.; Jan. 1, 1913, to Jan. 1, 1915, Superintendent, District 1, Manitoba Division, Kenora, Ont.

**J. A. DeWolfe**, whose appointment as chief clerk to Vice President and General Manager, Western Lines, C. P. R., Winnipeg, was announced in our last issue, was born at Woodstock, Ont., Aug. 31, 1884, and entered railway service, July 10, 1899, since when he has been, to Apr. 16, 1900, stenographer to Locomotive Foreman, G. T. R., London, Ont.; Apr. 17, 1900 to May 12, 1903, not in railway service; May 13, to June 23, 1903, clerk to Car Foreman, C. P. R., Toronto; June 23, 1903, to May 22, 1905, clerk in offices of Trainmaster and of Superintendent, C. P. R., London, Ont., and Toronto; May 22, 1905, to May 7, 1907, clerk to Manager of Construction, C. P. R., Toronto; May 7, 1907, to June 21, 1909, secretary to General Manager, C. P. R., Montreal; June 23 to Aug. 24, 1909, assistant chief clerk, Second Vice President's office, C. P. R., Winnipeg; Aug. 24, 1909, to Dec. 31, 1914, chief clerk, Engineering Department, Western Lines, C. P. R., Winnipeg.

**James Neil Murphy**, whose appointment as Trainmaster, District 1, Alberta Division, Medicine Hat, was announced in our last issue, was born at Mooretown, Ont., May 10, 1879, and entered railway service in July, 1897, since when he has been, to June, 1898, operator, Manitoba and Northwestern Ry., Winnipeg; June 20, to Sept. 3, 1898, operator, C.P.R., Winnipeg; Sept. 3, 1898, to Dec. 15, 1899, ticket clerk, C.P.R., Brandon, Man.; Dec. 15, 1899, to Mar. 11, 1900, operator, Columbia and Western Ry., Smelter Jct., B.C.; Mar. 11 to Oct. 15, 1900, Division Engineer's clerk, C.P.R., Smelter Jct., B.C.; Oct. 15, 1900, to Feb. 2, 1901, storekeeper, Trail Smelter, Trail, B.C.; Feb. 2, 1901, to May 1, 1902, Division Engineer's clerk, C.P.R., Trail, B.C.; May 1, 1902, to Jan. 7, 1905, accountant, Construction Department, C.P.R., Winnipeg; Jan. 7 to May 21, 1905, clerk, C.P.R., Kenora, Ont.; May 21 to July 19, 1905, dispatcher, C.P.R., Lipton, Sask.; July 19 to Oct. 11, 1905, clerk, C.P.R., Kenora, Ont.; Oct. 11, 1905, to Feb. 1, 1909, chief clerk, C.P.R., Kenora, Ont.; Apr. 7, 1909, to Apr. 27, 1910, instrumentman, C.P.R., Alberta Division; Apr. 27, 1910, to Sept. 16, 1914, Resident Engineer, C.P.R., Alberta Division; Sept. 16 to Dec. 31, 1914, Trainmaster, C.P.R., Souris, Man.

**Sir Herbert S. Holt**, who was created a

knight bachelor, Jan. 1, was born in Dublin, Ireland in 1856, and was educated as a civil engineer. He came to Canada in early life and engaged in railway construction, being associated at various times with the late James Ross, Sir William Mackenzie and Sir Donald Mann. From 1875 to 1883 he was, successively, engineer, Credit Valley Ry., Victoria and Lake Simcoe Jct. Rys., Ontario and Quebec Ry., and other lines in Ontario, now incorporated in the C. P. R.; Engineer and Superintendent of Construction, Prairie and Mountain Divisions, C. P. R. He also carried out, in association with the other railway builders named, a number of contracts for the construction of C. P. R. lines in Quebec, Maine and in the Rocky Mountains, and also on the Qu'Appelle Long Lake and Saskatchewan Rd. and Calgary and Edmonton Ry. Since 1892 he has devoted his time to financial matters, and in addition to being President of the Royal Bank, is, or has been, connected with the Montreal Light, Heat and Power Co., Canadian General Electric Co., C. P. R., Ogilvie Flour Mills Co., Canadian Car and Foundry Co., London St.



J. M. Cameron.  
Assistant General Superintendent, British Columbia Division, Canadian Pacific Railway.

Ry., Detroit United Ry., Toledo Rys. and Light Co., Monterey Ry. and Light Co., Canadian Construction Co., Montreal Park and Island Ry., and many other concerns. He is a member of the Canadian Society of Civil Engineers, and of the American Society of Civil Engineers.

**John Murray Cameron**, whose appointment as Assistant General Superintendent, British Columbia Division, C. P. R., Vancouver, was announced in our last issue, was born at Lochaber, N. S., Dec. 18, 1867, and entered railway service, July 1883, since when he has been, to Dec. 1883, laborer, C. P. R., Moose Jaw, Sask.; Dec. 1883, to Apr. 1884, wiper, C. P. R., Moose Jaw, Sask.; Apr. 1884 to Apr. 1885, bridge and building laborer, Western Division, C. P. R.; Apr. 1885 to Feb. 1886, pump man, Western Division, C. P. R.; Feb. 1886, to Oct. 1888, brakeman and train baggage man, C.P.R., Medicine Hat, Alta.; Nov. 1888 to June 1889, brakeman and conductor, Northern Pacific Ry., Tacoma, Wash.; June 1889 to Dec. 1890, brakeman and conductor, Oregon and Washington Territory Rd., Walla Walla, Wash.; Dec. 1890 to

July 1892, conductor, Columbia and Puget Sound Rd., Seattle, Wash.; July 1892 to June 1893, brakeman and conductor on construction, Great Northern Ry., Seattle and Spokane, Wash.; June 1893 to Oct. 1895, conductor, G. N. R., Great Falls, Mont.; Oct. 1895 to Sept., 1899, conductor, Kaslo and Slocan Ry. (G. N. R.), Kaslo, B. C.; Sept., 1899 to May 1900, conductor and construction trainmaster, G. N. R., Bonners Ferry, Idaho; May 1900 to Aug. 1907, brakeman and conductor, C. P. R., Nelson, B. C.; Aug. 1907 to Oct. 1909, Trainmaster, C. P. R., Nelson, B. C.; Oct. 1909 to June 1910, Trainmaster, C. P. R., Vancouver, B. C.; June to Dec. 1910, Superintendent, C. P. R., Moose Jaw, Sask.; Jan. 1911 to Dec. 1914, Superintendent, C. P. R., Medicine Hat, Alta.

### Progress of Rogers Pass Tunnel Construction.

Canadian Railway and Marine World for January gave particulars of a new American hard rock tunnelling record of 817 ft. in one month at the C.P.R. tunnel in the Selkirk Mountains at Glacier, B.C. The previous American record was 810 ft. in 31 working days in the Canadian Northern Ry. Mount Royal tunnel at Montreal.

The following additional information has been furnished by the contractors, Foley Bros., Welch & Stewart: "The heading, 7½ x 10 ft. in section, was driven through slate, containing quartzite bands, by a gang consisting of 3 drill runners, 2 drill helpers, 8 muckers, 1 trackman, 1 pumpman, and 1 walking foreman for two headings. The grade was a 1% slope downward and the haulage was done by mules. A pump had to be placed at the face of the heading before dropping the drill bar for the lifter holes. This bar was 9½ ft. long and carried three Ingersoll-Rand water Leyner drills. After the machine men had finished drilling the top holes of the heading and were waiting for the muck to be cleared away before dropping the bar to drill the lifter holes, they would oil their machines and connect up the air and water lines so that they could start drilling 1½ minutes after the bar had been placed in its new position. Shooting was done 4 times in 24 hours on 12 days, 5 times in 24 hours on 16 days, and 6 times in 24 hours on 2 days. The record round was 3 hr. 40 min. Two complete rounds were fired in 8 hours on Nov. 27 and 28. The record day's work was 37 ft. on Nov. 27. The record week's work was 220 ft. from Nov. 23 to 29. While the record of 817 ft. in a month was made in November that month contained only 30 days. Including Dec. 1 a record of 852 ft. was made for 31 days."

Following is the record of the construction during December:

East end pioneer heading 544 ft.; quartzite with some schist.

East end centre heading 523 ft.; schist with some quartzite.

West end pioneer heading 852 ft.; slate with small quartzite bands.

West end centre heading 686 ft.; slate with small quartzite bands.

The advance of 852 ft. in the west pioneer heading in December, makes a new American record the previous record being 817 ft. as stated above.

A. C. Dennis, M.Can.Soc.C.E., is Superintendent for the contractors: Jos. Murphy is Assistant Superintendent East End, and Jos. Fowler, Assistant Superintendent West End.

A suggested cause of frame breakage lies in the drop, upwards of 3 ins. in many cases, that a locomotive must take in passing off a turntable.



## Canadian Northern Railway Construction, Betterments, Etc.

**Canadian Northern Quebec Ry.**—The Dominion Parliament is being asked to extend the time for the building of the following lines:—From Rawdon northerly to the National Transcontinental Ry., with a branch to Joliette, and from St. Jerome to St. Eustache, Que.

The company has under consideration a project for the building of a branch from Huberdeau, the terminus of the old Montfort and Gatineau Ry., to St. Remi, Que., eight miles.

**James Bay and Eastern Ry.**—The Dominion Parliament is being asked for an extension of time for the building of the projected line from Lake Abitibi easterly and south easterly, passing the south end of Lake St. John, to the mouth of the Saguenay River. About 30 miles of this line from Roberval, at the southern end of Lake St. John, westerly, is under contract, to J. P. Mullarkey.

**Canadian Northern Ontario Ry.**—The old locomotive house at North Trenton, Ont., with equipment, and considerable other property was destroyed by fire, Jan. 4. The damage is estimated at \$100,000. The company has under survey, a line from Toronto to Niagara Falls, Ont., 79.13 miles. The surveys are practically completed, and the negotiations with the local authorities are well advanced. The section has been reported on several occasions to have been put under contract, but nothing is likely to be done on it at present.

The Dominion Parliament is being asked to extend the time for the building of the following lines: From Washago to Kincardine; from Arnprior to Gananoque; from Pembroke to Cobourg or Port Hope; from Frenchman's Bay to Owen Sound; from Niagara River to Goderich; from Hawkesbury to or near Lanark; from Berlin through Guelph, Acton and Brampton to Toronto; from Berlin to St. Marys and Woodstock; from Sarnia to Chatham and from Orillia to Goderich, with a branch to Owen Sound, all in Ontario.

**Canadian Northern Ry.**—The ratepayers of Port Arthur defeated the bylaw confirming the agreement for the transfer of certain lands on the waterfront. The City Council has arranged to reconsider the agreement, with a view of having the matters about which there is a difference amicably adjusted.

The Board of Railway Commissioners has authorized the opening for traffic of the line between Grand Marais and Bird's Hill, Man., 50 miles temporarily.

The Board of Railway Commissioners has authorized the opening for traffic of the line from the junction with the Balke River subdivision, north of Camrose, Alberta, to a junction with the C. N. Western Ry. near Strathcona, 46 miles.

It was reported in Edmonton, Alberta, Jan. 12, that the bridge over the Pembina River, on the Onoway-Peace River line had been completed. The grading on Whitecamp, will, it is expected, be finished in the spring, and the track laid, so as to get the steel in for the bridge across the McLeod River. The approaches and abutments have already been completed for this bridge. A train service has been put in operation to Sangudo, at the Pembina River, 32 miles from Onoway.

The Dominion Parliament is being asked to extend the time for the building of the following lines:—From Strathcona southerly to Calgary; from near Swan River westerly to the Saskatchewan River; from Regina to Red Deer with a branch to Dalmeny; from

mileage 40 on the Oak Point branch, via Oak Point to Grand Rapids on the Saskatchewan River; from Winnipeg through Springfield to the eastern boundary of Manitoba; from Strathcona via Calgary to the confluence of the Little Bow and Belly Rivers, and on to Lethbridge. This latter line was originally authorized to be built by the Alberta Midland Ry., which has been amalgamated with the C. N. R. The section of the line from Strathcona to Calgary covers the same territory as the C. N. R. Strathcona-Calgary line mentioned first in the lines for the construction of which an extension of time is asked.

A Vancouver telegram says that track laying on the main transcontinental line in British Columbia was completed at Basque, on the North Thompson River, about 200 miles from Vancouver, Jan. 23, and that ballasting should be finished by April 15. There is now continuous track from Port Mann, B.C., to Port Arthur, Ont., where there is a gap of about 2 miles, the C.N.R. at present using C.P.R. tracks as a connection between its eastern and western lines. From Port Arthur east, track is laid to the west portal of Mount Royal tunnel, Montreal, except at Pembroke, Ont., Chats Falls, Riviere des Prairies, Que., where bridges are being built.

**Vancouver Terminals.**—Work is being prosecuted on the reclamation work on the site of the proposed terminals at False Creek, Vancouver. The bulkhead, which will form a barrier around 65 acres of the 164½ acre tract is practically completed. The bulkhead extends practically half way down the proposed terminal site to a point where it branches off diagonally to China Creek. The Pacific Dredging Co., which has the contract for excavating a deep-water channel in False Creek, and for supplying

material for the filling in of the C. N. R. terminal site, is working a short distance to the west of Granville St. bridge, and moved its dredge east of Connaught Bridge Jan. 14. More than 3,250,000 yards of filling will be required to reclaim the entire area owned by the C. N. R. Of this amount 1,100,000 has been deposited. (Jan., pg. 23.)

## Railway Expenditures in British Columbia.

—Sir Richard McBride, Premier of British Columbia, is reported to have said Jan. 2, that more than \$26,000,000 was expended upon railway construction in the Province during 1914. Of this, \$8,195,000 was expended by the Canadian Northern Ry.; \$12,885,000 by the Pacific Great Eastern Ry., and \$5,000,000 by the Kettle Valley Ry. With the completion of the work on these lines about 1,900 miles of new main line track would be added to the railways in the Province. It will be noted that the expenditure mentioned by the Premier only covers work done on lines for the construction of which the Province is guaranteeing bonds. It does not include the Grand Trunk Pacific Ry., the C. P. R. second track, Kootenay Central Ry., and other construction, or the Great Northern Ry. terminals construction expenditure in Vancouver, all of which are being carried out independent of financial aid from the Province.

Ralph T. Hatch, Sales Agent, National Malleable Castings Co., St. Paul, Minn., writes: "I have always been very much interested in Canadian Railway and Marine World, particularly during my residence in Montreal, in charge of the company's Canadian office, and I consider it one of the most complete, comprehensive and satisfactory publications on the continent covering railway and railway supply matters."

## Grain in Store at Terminal Elevators, Interior Terminal Elevators and at Public Elevators in the East.

The following figures have been compiled by the Trade and Commerce Department, from official reports received by it:—

Week ended Jan. 14, 1915.	Wheat.	Oats.	Barley.	Flax.	Totals.
Fort William:—	Bush.	Bush.	Bush.	Bush.	Bush.
C. P. R. ....	154,653	75,017	16,018	3,547	249,235
Consolidated .....	404,897	162,860	29,969	75,150	672,876
Empire Elevator Co. ....	308,672	235,197	25,032	98,196	667,097
Ogilvie Flour Mills Co. ....	647,717	63,518	11,173	.....	722,408
Western Terminal Elevator Co. ....	308,140	84,177	9,215	235,996	637,528
G. T. Pacific .....	637,445	369,450	20,510	78,272	1,105,677
Grain Growers' Grain Co. ....	887,779	290,215	59,004	.....	1,236,998
Fort William Elevator Co. ....	328,969	92,511	25,625	45,841	492,946
Eastern Terminal Elevator Co. ..	172,562	110,784	7,330	.....	290,676
Port Arthur:—	.....	.....	.....	.....	.....
Port Arthur Elevator Co. ....	1,055,020	454,795	59,002	71,695	1,640,512
D. Horn & Co. ....	25,967	8,564	.....	39,676	74,207
Dominion Government Elevator...	247,904	107,697	3,251	68,275	427,127
Total Terminal Elevators .....	5,179,725	2,054,785	266,129	716,648	8,217,287
Saskatoon:	.....	.....	.....	.....	.....
Dominion Government Elevator .....	450,136	594,226	14,157	.....	1,058,519
Moosejaw:	.....	.....	.....	.....	.....
Dominion Government Elevator .....	1,310,423	331,648	13,525	190	1,655,786
Total Interior Terminal Elevators .....	1,760,559	925,874	27,682	190	2,714,305
Depot Harbor:	.....	98,650	.....	.....	98,650
Midland:—	.....	.....	.....	.....	.....
Aberdeen Elevator Co. ....	377,313	138,281	.....	.....	515,594
Midland Elevator Co. ....	.....	.....	.....	.....	.....
Tiffin, G.T.P. ....	497,383	793,354	.....	.....	1,290,737
Port McNicoll .....	2,383,234	754,587	.....	85,729	3,223,550
Collingwood .....	27,691	.....	.....	.....	27,691
Goderich .....	*362,433	*158,141	.....	*33,417	*553,991
Goderich .....	708,190	99,777	.....	.....	807,967
Harbor Commissioners, Quebec....	2,994	52,775	.....	.....	55,773
Kingston:—	.....	.....	.....	.....	.....
Montreal Transportation Co. ....	15,076	5,660	.....	.....	20,736
Commercial Elevator Co. ....	38,275	82,243	.....	.....	120,518
Port Colborne .....	662,772	301,288	90,326	*38,369	1,092,755
Prescott:	.....	.....	.....	.....	.....
Montreal:—	.....	.....	.....	.....	.....
Harbor Commissioners no. 1 .....	314,721	.....	9,067	17,908	341,696
Harbor Commissioners no. 2 .....	221,964	613,550	25,704	19,982	881,200
Montreal Warehousing Co. ....	28,916	265,431	228,977	18,601	541,925
West St. John, N.B. ....	729,299	589,908	.....	.....	1,319,207
Total Public Elevators .....	6,370,265	3,953,645	354,074	*38,369	10,891,990
Total quantity in store .....	13,310,545	6,934,304	647,885	175,637	21,823,582
*Grain afloat in vessels. †Corn.	.....	.....	.....	930,844	.....



# Canadian Railway AND Marine World

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## Standard General Specifications for Con- crete and Reinforced Concrete.

At the Canadian Society of Civil Engin-  
eers, in Montreal, in January, the committee  
on concrete and reinforced concrete present-  
ed specifications for adoption by the So-  
ciety as a standard general specification.  
Following are extracts from the com-  
mittee's report, signed by W. J. Francis,  
(chairman):—

"Since the re-appointment of the com-  
mittee at the annual meeting in Jan., 1914,  
a great deal of consideration has been given  
to the draft then submitted. A certain  
amount of discussion took place at the an-  
nual meeting. Subsequently the various  
branches of the Society were specially re-  
quested to discuss the document, and many  
of the secretaries thereof forwarded discus-  
sions. A number of members took part in  
written discussion as individuals. In all,  
the written discussions approximated 30,000  
words. The views expressed varied from  
high compliments to such phrases as "utter  
nonsense." All of the discussion was tran-  
scribed and issued to every member of the  
committee.

"At the last annual meeting the com-  
mittee desired an extension of time in  
order that further consideration might be  
given to the question of shearing action in  
reinforced concrete beams. This series of  
tests was arranged for at informal meet-  
ings early in the year. The Atlas Construc-  
tion Co., through its President, C. M. Mors-  
sen, a member of the Committee, very  
kindly made sixty-four 8 x 12 in. concrete  
beams, 11 ft. long. In the McGill University  
laboratories these beams were tested under  
the direction of Prof. H. M. MacKay and  
Prof. E. Brown, both members of the society  
and of the committee. All the beams were  
tested to destruction, some at the age of  
two months and the balance at the age of  
three. The tests took 12 days of laboratory  
time. The results were most conclusive,  
and were subsequently considered by the  
committee. Later in the present season  
the details of these tests will be presented  
to the Society in the form of a paper, but it  
is incumbent upon me here to emphasize  
the great amount of labor that Mr. Mors-  
sen, Prof. MacKay and Prof. Brown have  
given the Society in this regard. After hav-  
ing all the discussion and the results of the  
tests, the committee resumed its regular  
weekly sessions in the early autumn, and I  
now forward the result of the deliberations  
which it is trusted will meet the Society's  
approval.

"In July last the committee was deprived  
of the wise counsel of one of its most en-  
thusiastic members by the death of Dean  
Galbraith. It is with the greatest pleasure  
that I refer to the cordial relations that  
have existed in the committee during the  
whole of its two years of existence, and to  
the great interest which every member of  
the committee has taken in the work. All  
have been in close touch with the delibera-  
tions, and I believe the draft may be taken  
as the unanimous view of the following  
representative engineers composing the  
committee,—S. Baulne, Consulting Engineer  
and Professor de Constructions Metalliques  
et Beton Arme, at Ecole Polytechnique,  
Montreal; E. Brown, Professor of Applied  
Mechanics, McGill University; E. Brydon-  
Jack, Consulting Engineer and Professor of  
Civil Engineering, University of Manitoba;  
P. Gillespie, President Canadian Cement  
and Concrete Association, and Professor of  
Applied Mechanics, University of Toronto;  
H. M. MacKay, Professor of Civil Engineer-  
ing, McGill University; E. S. Mattice, Presi-  
dent Structural Engineering Co., and Sales  
Manager Dominion Bridge Co., Montreal; C.

N. Monsarrat, Chairman Quebec Bridge  
Commission, Montreal; C. M. Morssen, Con-  
sulting Engineer and President Atlas Con-  
struction Co., Montreal; P. B. Motley, Chief  
Bridge Engineer, C.P.R., Montreal, and H.  
Rolph, Secretary, John S. Metcalf Co.,  
Montreal. While some have been unable to  
attend all the meetings for various good  
reasons, a number have not missed a single  
meeting during the two years the Committee  
has been in existence.

## Great Northern Railway Lines in Canada.

**Vancouver, Victoria and Eastern Ry. and  
Navigation Co.**—The Board of Railway Com-  
missioners has rescinded its order requiring  
the company to build overhead crossings at  
Pender, Keefer and Harris Streets, Van-  
couver, but reserving the rights of any  
person to apply to have the crossings suit-  
ably protected with signs, etc. This was  
the order against which the British  
Columbia Electric Ry. successfully appealed  
to the Imperial Privy Council, that company  
having been directed to pay a portion of the  
cost of the bridges named.

**Vancouver Terminals.**—Plans have been  
filed with the Vancouver City Council for  
the bridges across the Grand View cut at  
Clarke Drive and Woodland Drive, and also  
for the approaches. According to the  
agreement with the city, the first bridge  
has to be completed by April 1, and the  
second by Sept. 1. (Jan., pg. 14.)

## Corrections for the Erring.

"St. Johns, N. B.—St. Johns Ry. Co.  
plans to construct 1½ mile track during  
1915. W. D. Reid, Gen. Mgr., St. Johns."  
—From Engineering Record, New York.

There is no St. Johns in New Brunswick,  
and no St. Johns Ry. Co., but there is a St.  
John's in Newfoundland, also in Quebec.  
W. D. Reid is President and General Man-  
ager of the St. John's St. Ry. Co., St.  
John's, Nfld., which is owned by the Reid  
Newfoundland Co.

**The Canadian Ticket Agents' Associa-  
tion's** executive committee, at a meeting in  
Toronto, Jan. 21, accepted a joint invitation  
from the Chicago and North Western Line  
and the Union Pacific System, tendered  
through their representatives at Toronto,  
B. H. Bennett and J. J. Rose, to hold its  
next annual outing at Denver, Col., Oct. 11  
to 13. E. de la Hooke, who has been the  
association's Secretary-Treasurer contin-  
uously since its establishment, was presented  
with a travelling bag by a number of trans-  
portation men.

**Western Dominion Ry.**—Application is be-  
ing made to the Dominion Parliament for an  
extension of time for the building of this  
projected line, the route plans of which are  
under the consideration of the Minister of  
Railways, as described in our Dec., 1914,  
issue. O. E. Culbert, Calgary, Alberta, is  
Secretary. (Dec., 1914, pg. 545.)

One method of hardening high speed steel  
is to heat it slowly up to the sweating point,  
or 2,200 degrees Fahr., after which cool the  
cutting point of the tool in oil, and when  
thoroughly black, cool rapidly in a com-  
pressed air blast.

High temperatures increase the tendency  
in lead storage batteries to form the white  
insoluble sulphate in the plates, and in con-  
sequence, storage batteries should be care-  
fully watched in the extremely warm  
weather.

The Toronto Board of Control is opposed  
to a proposal by the Mayor, to ask for author-  
ity to spend \$50,000 on a motor omnibus  
system in the city.



## Canadian Pacific Railway Construction, Betterments, Etc.

**Winnipeg Terminals.**—Work has been started on the changes to be made at the Winnipeg station. The area formerly used as a dining room is being transferred into a ticket office. As soon as this is completed the present ticket office will be arranged for a telegraph office and information bureau. The present baggage room is to be converted into a waiting room, and at its west entrance will be located the new dining room and lunch counter. It is said that connection will be made with the Royal Alexander hotel kitchen, which will be utilized in supplying food to the station dining room. In order to give easy access to the subway beneath the new overhead tracks, a flight of broad stone steps will be placed, beginning near the centre of the present rotunda or main waiting room. The ladies' waiting room will remain as at present situated. It was stated at the City Hall, Jan. 15, that the estimated cost of the station alterations is about \$1,500,000.

**Rogers Pass Tunnel.**—Considerably more than two miles of the preliminary bore has been driven from both sides of Mount Macdonald, one of the principal peaks in the Selkirk range. From the eastern end, the drillers were recently 6,600 ft. into the heart of the mountain, and from the western end 4,300 ft. A large portion of the tunnel, which will be double track, has been finished ready for traffic. The acceleration of speed during the past few months will, it is expected, enable the contractors to complete the tunnel early in the summer of 1916, some six months ahead of the date called for in the contract.

**British Columbia Division.**—The Board of Railway Commissioners has authorized the opening for traffic of half a mile of second track on the Thompson Subdivision, B. C., mileage 0 to 0.5.

Press reports state that work will be started shortly on the building of an oil tank, with a capacity of 54,000 barrels, at Vancouver, by the Union Oil Co., which supplies the C.P.R. with oil for its oil burning locomotives.

H. Rindal, Division Engineer, had a conference with the New Westminster City Council, Dec. 22, in connection with the laying of industrial tracks along the north side of certain recently improved water lots. The city has asked him to prepare the necessary plans. (Jan., pg. 15.)

**Kootenay Central Ry.**—The total length of this line from Colvalli, on the Crownsnest branch, to Golden, on the main transcontinental line, is 166.7 miles. A mixed train service was put in operation over it, Jan. 1, the official authorization to run trains over the last completed section from Edgewater, mileage 59 south of Golden, to Wasa, mileage 131.7, having been given by the Board of Railway Commissioners, Dec. 23.

**Eastern Canadian Passenger Association.**—At the annual meeting in Montreal, Jan. 5 the following were elected as the executive committee:—R. L. Fairbairn, G. P. A., Canadian Northern Ry., Toronto; W. P. Hinton, A. P. T. M., Grand Trunk Ry., Montreal; J. F. Pierce, G. P. A., Canada Steamship Lines, Ltd., Montreal; W. Stitt, G. P. A., Canadian Pacific Ry., Montreal. J. F. Pierce was elected chairman of the association and R. L. Fairbairn, chairman of the executive committee. G. H. Webster was re-elected Secretary. The rules committee consists of R. L. Fairbairn, W. P. Hinton, W. Stitt, J. W. Hanley, G. C. Martin, N. Mooney, L. W. Landman, H. H. Melanson, and F. T. Grant.

## Railway Rolling Stock Notes.

The C. P. R. has ordered 3 steel frame box cars, 40 tons capacity, at its Angus shops.

The G. T. R. has received 10 first class cars from Canadian Car and Foundry Co.

The Intercolonial Ry. has received a 100 ton wrecking crane from the United States.

Armstrong, Whitworth and Co., Montreal, have ordered 6 industrial cars, 2 tons capacity, from Canadian Car and Foundry Co.

The Crossen Car Co. has completed 5 baggage cars for the Canadian Northern Ry., and is building steel underframe colonnade cars for the same company.

The C. P. R., between Dec. 15 and Jan 15, received the following additions to rolling stock: 1 steel first class car, 4 steel baggage and express cars, 39 flat cars and 1 class D4 locomotive, from its Angus shops; 2 double track snow ploughs from Canadian Car and Foundry Co., and 1 ore car from National Steel Car Co.

The Intercolonial Ry. has ordered 5 steel single track snow ploughs, C. P. R. standard type, from Canadian Car and Foundry Co. Following are the chief details:—

Length over all	32 ft. 1 9-16 ins.
Width over side sills	8 ft. 9 1-8 ins.
Height top of rail to top of eaves angle,	11 ft. 3 ins.
Height top of rail to top of cupola, approx.	14 ft. 10 ins.
Width over wings extended	16 ft.
Extreme width of cupola	8 ft. 9 ins.
Extreme length of cupola	4 ft. 11 1/4 ins.
Truck centres	18 ft.
Wheel base, leader truck	4 ft. 2 ins.
Wheel base, rear truck	5 feet. 3 ins.

## Railway Finance, Meetings, Etc.

**Canadain Pacific Ry.**—The company, desiring to anticipate repayment of the principal of its sterling 5% first mortgage debenture bonds, due July 1, has authorized Baring Bros. and Co., London, Eng., until further notice, to redeem them at par with accrued interest from Jan. 1 to date of payment, less income tax. Bondholders desiring to avail themselves of the offer must deposit their bonds with the July 1 coupon attached, at Baring Bros. and Co.'s London office.

**Canadian Pacific Ry.**—Application is being made to the Board of Railway Commissioners for a recommendation to the Governor in Council to sanction a lease to the C. P. R. of the New Brunswick Coal and Ry. Co.'s line, dated Oct. 8, 1914, and of the Fredericton and Grand Lake Coal and Ry. Co.'s line, dated Nov. 4, 1914. The last named extends from Fredericton to Minto, and the first named from Minto to Chipman, N. B. The F. and G. L. Coal and Ry. Co.'s line was built in 1913-14. The N. B. C. and Ry. Co.'s line was operated for some years prior to the lease in behalf of the Province of New Brunswick.

The company is applying to the Dominion Parliament for authority to lease or charter any of its steamships, ferries or other vessels to any incorporated company having for its object the owning or operation of vessels, and to subscribe for, or acquire, stocks, bonds or other securities of such companies.

**Grand Trunk Ry.**—The Dominion Parliament is being asked to authorize the company to make from time to time advances to any company the controlling interest of which is held for the benefit of the G. T. R. or the G. T. Pacific Ry.; to buy and sell the stock, bonds or other securities of any such company, and to use for that purpose the proceeds of any class of stock issued or to be issued by the G. T. R.

**Pere Marquette Rd.**—According to a re-

port prepared by M. E. Cooley, on behalf of the receiver and of the Michigan State Commission, the P. M. R. has a reproduction value of \$96,562,771. The reproduction cost, less depreciation, is given at \$78,545,241. The cost per mile of the road is figured at \$45,392, or, less depreciation, \$36,770. Of the mileage, 2,586 is in Michigan, and 2,966 in five other states and in Canada.

**Shuswap and Okanagan Ry.**—A meeting of shareholders was called to be held at Victoria, B. C., Jan. 25, to pass bylaws changing the date of the annual meeting, and removing the head office to Montreal. J. E. McMullen, C. P. R. offices, Vancouver, is acting Secretary.

**Temiscouata Ry.**—Aggregate gross earnings for six months ended Dec. 31, \$114,688; operating expenses \$91,541; net earnings \$23,147, against \$123,545 aggregate gross earnings; \$101,854 operating expenses; \$21,691 net earnings, for same period 1913.

**The Toronto, Hamilton and Buffalo Ry.** has, it is reported, passed the dividend on its \$3,500,000 stock, and the explanation is made that the funds which ordinarily would have gone out in the dividend were added to the proceeds of loans from various companies represented in the ownership of the road, including the C.P.R., New York Central, and Michigan Central, for the construction of the company's new line, the Erie and Ontario Ry. between Smithville,

**White Pass and Yukon Route.**—Gross earnings from Jan. 1 to Dec. 7, 1914, \$1,545,140 against \$1,089,345 for same period 1913.

**The Winnipeg Aqueduct Construction Co., Ltd.**, has been incorporated under the Dominion Companies Act, with \$250,000 capital and office at Winnipeg, to take over, in whole, or part, the interests of the Northern Construction Co., Ltd., and Carter-Halls-Aldinger Co., Ltd., or either of them, in contracts entered into with the Greater Winnipeg Water District, relating to the building of an aqueduct, and in connection therewith to build and operate construction railways, telegraph and telephone lines, etc. The provisional directors are, C. V. Cummings, W. H. Carter, J. B. McLean, F. E. Halls, G. H. Elliott and G. H. Davis, Winni-

**Balk Line on Railway Platforms.**—The Board of Railway Commissioners has ordered the New York Central Rd. to paint a balk line along its platforms in Canada, to show passengers the limit of safety when standing waiting incoming trains. An application to compel the company to raise the height of its platforms to conform to the standard height in the Dominion, viz., 9 ins., was dismissed. It was stated in the course of the hearing that two accidents had occurred on the St. Lawrence and Adirondack line recently, owing to waiting passengers standing too close to the edge of the platform.

**American Railway Engineering Association.**—R. Trimble, Chief Engineer, Maintenance of Way, Pennsylvania Lines west of Pittsburg, Northeastern System, Pittsburg, Pa., has been nominated for President for the ensuing year, and J. G. Sullivan, Chief Engineer, Western Lines, C.P.R., Winnipeg, has been nominated as Vice President. Among the nominations for directors, of whom three are to be elected, are H. R. Safford, Chief Engineer, G.T.R., Montreal, and F. H. Alfred, General Manager, Pere Marquette Rd., Detroit, Mich.

The genuine engineer, like the genuine man in any walk of life, will be preparing all his life. Each achievement he will value not merely for the wealth or glory it brings him, but as a preparation for some thing beyond. He who has got through all preparation work is dead.



## Transportation Appointments Throughout Canada.

The information under this head, which is almost entirely gathered from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

**Canada Steamship Lines, Ltd.**—J. J. PHELAN, formerly Purchasing Agent, Montreal, has been appointed Assistant Mechanical Superintendent, Montreal, not Assistant to Mechanical Superintendent, as stated in our January issue.

**Canadian Government Railways.**—S. B. WASS has been appointed Assistant Superintendent, St. John and Quebec Ry., in charge of station service, train service and track. Office, Fredericton, N.B.

On Dec. 19, F. P. Brady, General Superintendent, Canadian Government Railways, issued a circular announcing that J. J. McMANUS had been appointed Assistant Superintendent, National Transcontinental Ry., between Hervey Jct., and Parent, Que., in charge of station service, train service and track, with office at Hervey Jct., Que. On Jan. 22 we were officially advised that the Canadian Government Railways had discontinued operating the portion of the N.T.R. referred to, and that the appointment of Mr. McManus was therefore void.

**Canadian Northern Ry.**—S. E. LEGER, heretofore Travelling Freight Agent, Montreal, has been appointed City Freight Agent, Quebec, Que., vice A. A. Buckle, transferred.

A. A. BUCKLE, heretofore City Freight Agent, Quebec, Que., has been appointed Travelling Freight Agent, Montreal, vice S. E. Leger, transferred.

J. BARBOUR, whose appointment as Chief Claim Agent was announced in our last issue, will continue to perform the duties of Right of Way Agent, which position he held previous to his present appointment. Office, Toronto.

**Canadian Pacific Railway.** JAMES MANSON, heretofore Assistant to Vice President at Winnipeg, has been appointed Assistant to the Vice President of the Company (George Bury) at Montreal.

ARTHUR HATTON, heretofore Superintendent of Car Service, Western Lines, Winnipeg, has been appointed General Superintendent of Car Service, vice G. S. Cantlie, who, at his own request, has been granted leave of absence for an extended period, in order that he may take command of the Montreal unit to be organized for service with the Third Contingent of the Canadian Expeditionary Force. Office, Montreal.

G. WHITELEY, heretofore Master Mechanic, Alberta Division, Calgary, has been appointed Assistant Superintendent of Motive Power, Eastern Lines. Office, Montreal. This is a new position.

A. A. WHITE has been appointed Tie and Timber Agent, St. John, N.B., reporting to the General Tie Agent, Montreal.

C. KYLE has been appointed Master Mechanic, Atlantic Division, vice C. R. Ord, retired on account of ill health. Office, McAdam Jct., N.B.

W. EVANS, heretofore Roadmaster, Chapleau, Ont., has been appointed section foreman at Sturgeon Falls, Ont.

W. B. HALL, heretofore section foreman, Carling, Ont., has been appointed Roadmaster, White River Subdivision, Chapleau, Ont., vice W. Evans, transferred.

T. HIGGINS, heretofore Freight Shop Foreman, Fort William, Ont., has been appointed Car Foreman there, vice T. Spence, promoted.

D'ALTON C. COLEMAN, who has been appointed Assistant General Manager, Western Lines, Winnipeg, is announced in

our last issue, has charge of maintenance and operation.

H. J. HUMPHREY, heretofore Car Service and Fuel Agent, Moose Jaw, Sask., has been appointed Superintendent of Car Service, Western Lines, vice A. Hatton, promoted. Office, Winnipeg.

W. E. CLINE, heretofore Chief Dispatcher, District 4, Alberta Division, Edmonton, is reported to have been appointed Chief Dispatcher, District 2, Manitoba Division, vice G. T. Coleman, transferred. Office, Winnipeg.

A. E. DALES has been appointed District Master Mechanic, District 3, Manitoba Division, vice L. G. Fisher. Office, Brandon.

G. T. COLEMAN, heretofore Chief Dispatcher, District 2, Manitoba Division, Winnipeg, has been appointed Car Service Agent and Fuel Agent, Moose Jaw, Sask., vice H. J. Humphrey, promoted.

A. STURROCK, heretofore District Master Mechanic, Cranbrook, B.C., has been appointed Master Mechanic, Alberta Division, vice G. Whiteley, promoted. Office, Calgary.

R. J. COLLINS, heretofore dispatcher, Moose Jaw, Sask., is reported to have been appointed Chief Dispatcher, District 4, Alberta Division, vice W. E. Cline, transferred. Office, Edmonton.

JOHN McRAE, heretofore Locomotive Foreman, Revelstoke, B.C., has been appointed Shop Foreman, Kamloops, B.C., vice G. Dillard.

L. G. FISHER, heretofore District Master Mechanic, District 3, Manitoba Division, Brandon, is reported to have been appointed District Master Mechanic, District 5, Alberta Division, vice A. Sturrock, promoted. Office, Cranbrook, B.C.

W. C. MACKENZIE, heretofore storekeeper at Grand Forks, B.C., has been given a position in the Car Department there, the position of storekeeper having been abolished.

T. SPENCE, heretofore Car Foreman, Fort William, Ont., has been appointed General Car Foreman, Vancouver, B.C., vice W. C. Hodgson, transferred.

W. C. HODGSON, heretofore General Car Foreman, B.C., has been appointed Mill Foreman, B.C., vice T. Spence, transferred.

**Central Vermont Ry.**—E. J. GUTHRIE, heretofore agent, pier 29, East River, New York, has been appointed Superintendent, Southern Division, C.V.R., vice John McCraw, assigned to other duties, and also Superintendent, Central Vermont Transportation Co. Office, New London, Conn.

JOHN McCRAW, heretofore Superintendent, Southern Division, New London, Conn., has been appointed General Agent there.

**Delaware and Hudson Co.**—M. J. POWERS, heretofore chief clerk to General Passenger Agent, has been appointed General Passenger Agent, vice A. A. Heard, resigned. Office, Albany, N.Y.

**Grand Trunk Pacific Ry.**—C. E. BROOKS, heretofore Locomotive Foreman, Edmonton, Alta., has been appointed General Foreman in charge of Shops, Transcona, Man., vice M. B. Dube, who has left the service.

The headquarters of the Stores Department has been moved from Portage la Prairie to Transcona, Man. W. J. STURGES is Storekeeper.

J. GORDON, heretofore Foreman Electrician, Car Department, has been appointed General Electric Foreman, Motive Power Department, Transcona, Man.

A. C. TURTLE has been appointed Foreman Electrician, Car Department, Transcona, Man., vice J. Gordon, transferred.

H. McCALL, heretofore Superintendent, Edson, Alta., has been appointed Superintendent, with jurisdiction from Winnipeg to Watrous, and the Melville-Canora Branch, Sask., vice G. S. Cooke, resigned. Office, Melville, Sask.

J. A. MITCHELL has been appointed Locomotive Foreman, Biggar, Sask., vice A. S. Wright.

A. KILPATRICK has been appointed Superintendent, with jurisdiction from Edmonton to Prince George and intersecting branch lines, vice H. McCall, transferred. Office, Edson, Alta.

J. G. BROWN, heretofore Joint Car Inspector, Camrose, Alta., has been appointed Car Foreman, Jasper, Alta., vice W. B. McNiece, transferred.

W. B. McNIECE, heretofore Car Foreman, Jasper, B.C., has been appointed Car Foreman, McBride, B.C.

The following station agents have been appointed:—Elie, Man., W. J. Pelland; Loverna, Sask., F. A. Peacock; Ebenezer, Sask., D. W. McCarthy; Bickerdike, Alta., V. A. Scott; New Norway, Alta., F. F. Yerex.

**Grand Trunk Ry.**—J. W. FARRELL, Trainmaster, Districts 2 and 3, Eastern Lines, Richmond, Que., has had his jurisdiction extended over District 1, E. S. Cooper, formerly Trainmaster at Island Pond, Vt., having been transferred to Montreal, as announced in our last issue.

W. J. NIXON, heretofore Trainmaster, District 5, Eastern Lines, Montreal, has been appointed Trainmaster, District 4, Montreal.

F. W. WARREN, heretofore Locomotive Foreman, Coteau Jct., Que., has been appointed Locomotive Foreman, Southwark Terminal, Montreal, vice D. Ross, transferred to Western Lines.

E. B. MEEHAN has been appointed Locomotive Foreman, Coteau Jct., Que., vice F. W. Warren, transferred.

J. HENDERSON, Supervisor of Track, Brockville, Ont., who was on leave owing to ill health, has resumed his duties.

F. COOK, heretofore charge hand, has been appointed Foreman, Temder Shop, Stratford, Ont.

R. E. HOWICK has been appointed station agent at Welland Jct., Ont.

N. P. NORTH has been appointed Trainmaster, Durand, Mich., vice R. Kelley, deceased.

**Intercolonial Ry.**—See Canadian Government Railways.

**Lake Shore and Michigan Southern Ry.**—See New York Central Rd.

**Lake Superior Corporation.**—THOS. GIBSON, of Toronto, heretofore a director and Secretary, has been elected President, succeeding J. Frater Taylor, who continues as President, Algoma Steel Corporation, Ltd., and has also been appointed General Manager of the same. The Lake Superior Corporation has among its subsidiary companies, Algoma Steel Corporation, Algoma Central and Hudson Bay Ry. Co., Algoma Eastern Ry. Co., International Transit Co. and Trans St. Marys Traction Co.

**Lehigh Valley Rd.**—H. C. DAVIS, General Agent, New York, having resigned, that position has been abolished.

F. E. SIGNER has been appointed General Eastern Freight Agent, New York.

M. C. ROACH, Superintendent, New York Division, New York, has had his jurisdiction extended so as to assume charge of the operations and the handling of all freight on the piers in New York, Jersey City and National Stores, and of the movement of the company's floating equipment in New York harbor.

A. P. BEAM has been appointed General Baggage Agent. Office, South Bethlehem, Pa.



**C. T. O'NEAL**, heretofore Superintendent, Buffalo, N.Y., has been appointed Superintendent, Lake Division, vice F. G. Rogers. Office, Buffalo, N.Y.

**Midland Ry. of Manitoba.**—**J. L. KNIGHT** has been appointed acting Auditor and chief clerk, vice R. G. Thackray, who is on active service with the Canadian expeditionary force. Office, Winnipeg.

**National Transcontinental Ry.**—See Canadian Government Railways.

**New York Central Rd.**—The New York Central Rd. is the name of the new company which has taken over the New York Central and Hudson River Rd. and the Lake Shore and Michigan Southern Ry.

**IRA A. PLACE** has been appointed Vice President, in charge of the Law Department and of the Land and Tax Department. Office, New York.

**ALBERT H. HARRIS** has been appointed Vice President and General Counsel, and will perform such duties as may be assigned to him from time to time by the President, in addition to those of General Counsel. Office, New York.

**E. T. GLENNON** has been appointed Assistant Vice President, in charge of such matters as may be referred to him by the Vice President or General Counsel of the Company. Office, New York.

**A. T. HARDIN**, heretofore Vice President New York Central and Hudson River Rd., New York, has been appointed Vice President, N.Y.C. Rd., in charge of the Operating Department, embracing transportation, construction, roadway and equipment. Office, New York.

**J. J. BERNET**, heretofore Vice President, Lake Shore and Michigan Southern Ry., Chicago, Ill., has been appointed Resident Vice President, N.Y.C. Rd., and will act as the general representative of the company in the Illinois territory, and perform such other duties as may be assigned to him. Office, Chicago, Ill.

**P. E. CROWLEY**, heretofore General Manager, New York Central and Hudson River Rd., has been appointed Assistant Vice President, Operating Department, N.Y. C. Rd. Office, New York.

**New York Central Rd.**—Under the reorganization plan two grand divisions will be established—the Eastern, under the supervision of **W. J. Fripp** as General Manager, with headquarters at Albany, and the Western, under **D. C. Moon**, General Manager of the Western division, with headquarters at Cleveland. **A. S. Ingalls**, who will have charge of the line between Buffalo and Toledo, with headquarters at Cleveland, and **F. H. Wilson**, who will be in charge of the line between Toledo and Chicago, with headquarters in the last named city. Under Mr. Fripp there will be three general superintendents:—**T. W. Evans**, who will have charge of the line between Buffalo and Syracuse and from Montreal to Clearfield, Penn.; **E. J. Wright**, in charge of the line between Syracuse and the electric zone in New York, including the line into the Adirondacks and the Harlem division, and **M. Bronson**, who will have immediate charge of the electrical division.

**Pere Marquette Rd.**—**P. BIRREL**, heretofore Commercial Agent, Pittsburg, Pa., has been appointed Commercial Agent, Detroit, Mich.

**St. John and Quebec Ry.**—See Canadian Government Railways.

**Toronto, Hamilton and Buffalo Ry.**—**W. J. WARNICK**, heretofore Chief Dispatcher, Hamilton, Ont., has been appointed Trainmaster there.

**W. H. STANILAND**, heretofore Night Chief Dispatcher, Hamilton, Ont., has been appointed Chief Dispatcher there, vice **W. J. Warnick**, promoted.

**L. V. HARRINGTON**, heretofore dispatcher, Hamilton, Ont., has been appointed Night Chief Dispatcher there, vice **W. H. Staniland**, promoted.

**Wabash Rd.**—**HENRY MILLER**, General Manager for the Receiver, having resigned, all business heretofore handled by him is now dealt with by **S. E. COTTER**, General Superintendent, and all departments hitherto under the General Manager's jurisdiction have been transferred to the General Superintendent. Office, St. Louis, Mo.

**White Star-Dominion Line.**—The management of the Portland, Me., and Montreal offices has been merged, the company's operations at the former port are now directed entirely from Montreal. **JOHN TORRANCE** has been appointed Manager, and **P. V. G. MITCHELL**, Assistant Manager.

### Grand Trunk Railway Betterments, Construction, Etc.

**Montreal Track Elevation.**—It was reported, Jan. 15, that steps were being taken by the Montreal City Council to have the matter of the G.T.R. track elevation from Bonaventure station to St. Henri, pushed forward, with a view of construction being started during this year.

**Merriton to Thorold, Ont.**—We are officially advised that during 1914 the G.T.R. completed the construction of a three mile diversion between the above named points, necessitated by the new location of the Welland Canal. The Board of Railway Commissioners, Jan. 12, authorized the opening for traffic of a portion of this deviation, and to have a temporary crossover with the present line at bridge 11, Welland Canal.

**Port Huron Shops.**—The citizens' committee of Port Huron, Mich., are reported to have completed the purchase of the property of the Port Huron Engine and Thresher Co., in order to hand it over to the G.T.R. for the erection of new shops. The Thresher Co. is expected to vacate the property by June 1. Orders are reported to have been placed for \$250,000 of machinery for the shops, for early installation in such of the Thresher Co.'s buildings as will be retained. (Jan., pg. 14.)

### Great North Western Telegraph Co.'s Matters.

Consequent on the merging of the Great North Western and the Canadian Northern Telegraph Companies, the G. N. W. T. Co.'s principal office in Winnipeg in future will be in the premises heretofore occupied by the Canadian Northern Telegraph Co. at the corner of Main St. and Portage Ave. The office at 486 Main St., occupied by the G. N. W. T. Co. for many years, will be closed. **F. W. Lee**, heretofore Manager of the Canadian Northern Telegraph Co.'s Winnipeg office, has been given charge of the G. N. W. T. Co.'s office in Winnipeg Grain Exchange.

There will be no other consolidation of the G. N. W. and Canadian Northern Telegraph offices, except at a few small places in Ontario and Manitoba. In the west the G. N. W. T. Co. had only some half dozen small offices on the Canadian Northern lines, and in the east the Canadian Northern had commercial lines only from Toronto to Sudbury and Toronto to Ottawa. The G. N. W. T. Co. has for some time operated the telegraph lines on the Canadian Northern Quebec Ry., and the portion of the Canadian Northern Ontario Ry. in Ontario as far west as Ottawa. The two telegraph systems were not at all in competition, the G. N. W. operating in the east and the Canadian Northern in the west.

The Canadian Northern Ry. has a telegraph line between Toronto and Winnipeg, which has been used for railway purposes only. It is expected that the G. N. W. T. Co. will erect at least one copper wire from Montreal, or Toronto, to Winnipeg at a very early date, and this will be followed by continuing the through line to the Pacific Coast, after the completion of the Canadian Northern Pacific Ry. in British Columbia, which is approaching rapidly.

The Western Union Telegraph Co.'s lines in the Maritime Provinces east of Moncton, exclusive of those connecting from the International boundary to the cable landing stations, will be taken over by the G. N. W. T. Co. as soon as valuations can be made. The Western Union lines in British Columbia, now operated in the G. N. W. T. Co.'s name, will also be taken over as soon as details can be arranged. These lines extend from the Washington-British Columbia boundary to New Westminster and Vancouver, with cable connection to Victoria. The mileage is pole 140, wire 360.

### Special Cable Rates to the Expeditionary Forces.

By special arrangements between the telegraph and cable companies a cable service has been arranged, whereby week end letter cablegrams may be sent to soldiers, sailors and nurses serving with the expeditionary forces in the United Kingdom, or on the Continent, and also for the free transmission of messages relating to wounded combatants.

The special rates for the week end letters are:—From New Brunswick, Quebec and Ontario, 5c. a word; from Manitoba, 9c. a word, and from Saskatchewan and Alberta, 11c. a word. All such messages must have the letters EFM placed before them, which will be charged as one word, and if the persons to whom such messages are addressed are in France or Belgium, they will be forwarded by mail from London.

The arrangement for wounded soldiers' messages restricts the privilege to bona fide enquiries by relatives concerning persons officially reported to have been wounded or killed, and matter of a social nature must not be included in the messages. These messages must be addressed to the Minister of Defence at Ottawa, who will arrange their further free transmission. The letters WSM must be prefixed to such messages. The number of free messages which may be sent by relatives concerning any individual wounded combatant is limited to three. Persons offering such messages must present the original official advice or information about the particular casualty to which the message relates, and each message sent must be checked on the original advice. No free messages are allowed in respect of persons reported only slightly wounded. In all cases of special messages under these arrangements, whether free or not, the following particulars, considered essential by the British authorities, must be given as far as practicable:—regimental rank and name; squadron, battery or company; regiment or unit; expeditionary force concerned, whether British, Canadian, Australian, etc., or in case troops not with expeditionary forces, the name and place where stationed must be given. If the sender should not be in possession of all the required particulars, the message may still be sent, but all messages are at senders' risk and no enquiry concerning them can be undertaken. It is also stated that messages concerning persons officially reported to be suffering from disease or sickness come within the category mentioned.



# Electric Railway Department

## Interurban Passenger Cars on Nipissing Central Railway.

The two interurban cars for the Nipissing Central Ry., which were described preliminarily in Canadian Railway and Marine World for June, have been delivered, and a floor plan and exterior of one of them are given herewith: They have a total seating capacity of 52 in the three compartments. Following are some of the principal dimensions: Length over buffer, 51 ft.; over vestibules, 50 ft.; over body, 40 ft.; centre to centre of trucks, 28 ft.; width over sheathing, 8 ft. 9½ ins.; aisle width, 1 ft. 10 ins.;

The vestibule platform is dropped 10 ins. below the car level, the side sill knees being 3-16 in. plate 12 ins. deep at the end sill plate, reinforced top and bottom with 2 by 2 by ¼ in. angles, and secured to the underside of the sills. The centre sill knees are two 6 by 3½ by 7-16 in. angles, extending from the bumpers to 4 ft. back from the body bolster. The bumpers are 6 in. 8 lb. channels, bent to the contour of the vestibule end, and with the top bevelled back at 45 degrees and covered with sheet iron.



Exterior View of Interurban Car, Nipissing Central Railway.

height from rail to underside of side sills, 3 ft. 1 in.; height from rail over roof, 12 ft. 4 ins.; height from floor to top of window sill, 2 ft. 5 ins.; and height from vestibule platform to floor of car, 10 ins.

The underframing is of steel throughout, comprising essentially two centre sills of 7 in. 17½ lb. I beams spaced 12½ in. centres, extending from end sill to end sill, with a ¼ in. cover plate top and bottom, extending from bolster to bolster, and two side sills of 6 by 3½ by 7-16 in. angles extending from end sill to end sill, with a 3-16

The flooring is of 1 by 2½ in. yellow pine, laid longitudinally with a special mat surface. The platform flooring is hard maple, ¾ by 2½ in. The floor has trap doors. The body posts are of ash 2½ ins. thick. The car roof is of the single arch type, supported on 14 steel carlines, 1¾ by ½ in., with intermediate ash carlines at 10 in. centres. The roof boards are ½ in. thick, covered with no. 8 canvas.

There is a 24 in. swinging door between the general and smoking compartments, and a single sliding door in each bulkhead. The

whistles, etc. The car lighting is by two rows of pendant lights along the ceiling with a 3 lamp cluster in each vestibule.

The air brake equipment is the Westinghouse A.M.M. type, supplied by a D.I.E.G. compressor with a 600 volt motor. It has a type J governor, M. 15 D brake valves, B 6 feed valves, M 1 triple valve, a type R. 10 by 12 in. brake cylinder, B 3 conductor's valves and 3½ in. air gauges illuminated by a 6 volt lamp. There is also a geared hand brake equipment at each end of the car.

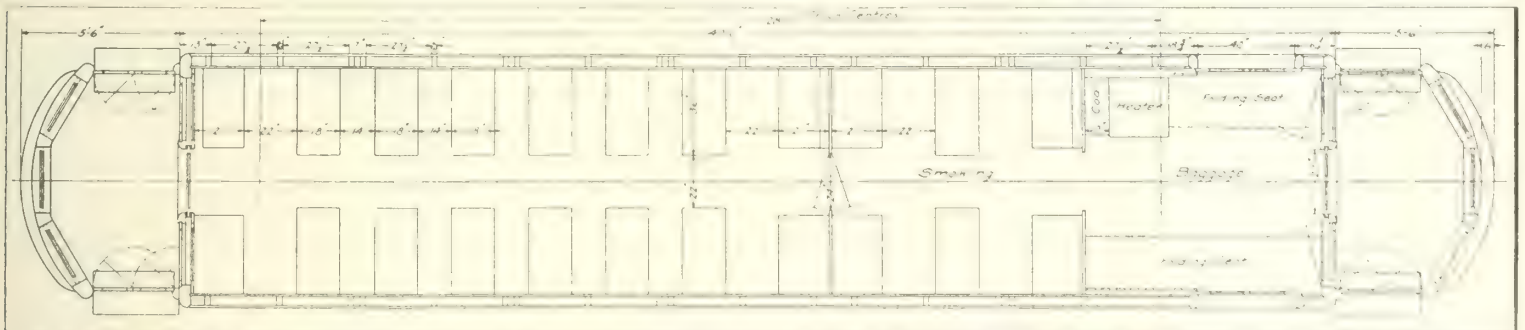
The trucks are Brill 27 M.C.B. type, with a 6½ ft. wheel base. The wheels are 33¼ ins. diam., steel tired with retaining rings, and with cast steel centres. The tires are 5 ins. wide by 3 ins. thick, and the axles have 4¼ by 8 in. journals. The motor equipment on these cars is the Westinghouse 306 double end control, with four motors, two on each truck, with a controller in each end of the car. The car is also equipped with an integrating wattmeter, rated at 600 volts, 400 amperes.

These two cars were built by the Preston Car and Coach Co., under order from the Timiskaming and Northern Ontario Ry. Commission, which also operates the N.C.R.

### Saskatoon Municipal Ry. Operating Results.

The financial statement of the city of Saskatoon, Sask., for the ten months ended Oct. 31, contains the following, covering the operations of the municipal railway and of its extension to Sutherland, operated under an agreement with the council of that town:—

Saskatoon Municipal Railways.	
Cash fares .....	\$73,468.12
Ticket sales .....	44,682.87
City departments .....	782.31
Chartered cars .....	269.55
Advertising .....	1,829.84
Rents .....	110.00



Floor Plan of Interurban Car, Nipissing Central Railway.

in. truss plate, 30 ins. deep, extending from end sill to the baggage door post, with the side sills under the baggage door reinforced by a 6 by ¾ in. plate, 9 ft. long. Pine side sills resting on the short flange of the steel side sill, are bolted to the latter. The end sills are built up of a 9 by ¾ in. steel plate, having a 6 by 3½ by 7-16 in. angle along the bottom outer face. The wooden end sills are of oak. The side and centre sills are tied with 4 in. 6¼ lb. channels at each side of each bolster, and braced diagonally each side of the bolster with 4 in. channels. There are 5 intermediate cross bearers of 4 in. 6¼ lb. channels, evenly spaced, and two crossbearers of 4 in. 7½ lb. I beams, located 4 ft. each side of the car centre line, extending beneath the sill.

vestibule doors are folding, in two parts, hinged against the bulkhead, and fitted with automatic folding apparatus. The car steps are 36 ins. wide, double at each door, the lower one with a 10 in. tread, and the upper one with a 9 in. tread, with 10 in. risers. There are 14 reversible seats, 36 ins. long, on a single pedestal and spring upholstered in rattan. There are also 8 stationary cross seats of similar construction, and two folding seats, one along each side of the baggage compartment.

The heating is provided for by a forced draught heater in the baggage compartment, and there are 10 ventilators, five on each side of the roof. The equipment also includes destination signs, signal bells, hand straps, fare register, arc headlight, signal

Miscellaneous .....	484.33	
		\$121,627.02
Superintendence of way and		
Locomotives .....	721.36	
Maintenance of way .....	3,021.73	
Maintenance of electric lines	951.73	
Maintenance of buildings and		
Equipment .....		
Superintendence of equip-		
ment .....	3,890.52	
Maintenance of cars and		
locomotives .....	60.64	
Maintenance of power equip-		
ment .....	1,370.30	
Maintenance of electrical		
equipment of cars and lo-		
comotives .....	3,849.12	9,739.12
Miscellaneous equipment ex-		
penses .....		
Superintendence of trans-		
portation .....	2,091.97	



Power purchased	24,794.10	
Construction, material and		
transportation	17,233.33	
Miscellaneous transportation		
expenses	\$328.53	\$2,447.93
General expenses	3,660.99	
Interest and damages	34.90	
Insurance	2,759.15	
Stationery and printing	157.34	
Stores and stable expense	320.05	6,942.11

Profit on operating	\$105,229.02	
	16,398.00	
	\$121,627.02	

Saskatoon and Sutherland Electric Railway.		
Cash fares	\$ 6,547.43	
Ticket sales	974.13	
Chartered cars	12.50	
Advertisements	2.40	
	\$ 7,571.36	

Superintendence of way	\$ 13.35	
Maintenance of way	481.80	
Maintenance of electric lines	90.15	
Maintenance of buildings	41.20	\$ 656.50
Superintendence of equip-		
ment	50.25	
Maintenance of cars	473.65	
Maintenance of electrical		
equipment	147.45	
Miscellaneous equipment ex-		
penses	103.85	775.20
Traffic expenses		
Superintendence of trans-		
portation	114.90	
Power purchased	1,766.50	
Wages, conductors and mo-		
tor-men	2,497.15	
Miscellaneous transportation		
expenses	286.83	4,665.33
General expenses	228.22	
Insurance	72.00	
Stationery and printing	15.78	
Stores and stable expense	7.49	323.49
Capital charges: interest	441.58	
Sinking	157.51	
Depreciation	411.85	1,010.34

	\$7,485.41	
Profit	88.95	
	\$7,574.36	
Recapitulation.		
Profit on operating, city line	\$ 16,398.00	
Profit on Sutherland extension	88.95	
Balance, loss	26,743.34	
	\$43,230.29	
Interest	\$24,497.51	
Sinking fund	9,085.58	
Depreciation	9,647.20	43,230.29
	\$43,230.29	

### Fares on Lethbridge Municipal Railway.

Canadian Railway and Marine World for January contained a report presented to the Lethbridge, Alta., City Council by Commissioner A. Reid, recommending changes in fares on the municipal electric railway. The following fares were put into effect Dec. 15:—Regular fare 5c. cash or the following tickets: Regular tickets (lilac) 5 for 25c., good at all hours. Limited tickets (brown) 6 for 25c., good from 6 to 8 a.m., 12 noon to 2 p.m., 5 to 7 p.m. not good on Sundays or public holidays. Children's tickets (green) from 5 to 14 years, 10 for 25c. Two children can travel on 5c. cash or one regular ticket. Double fare after midnight, cash or tickets. City employees' tickets for use on city's business only, 25 for \$1.

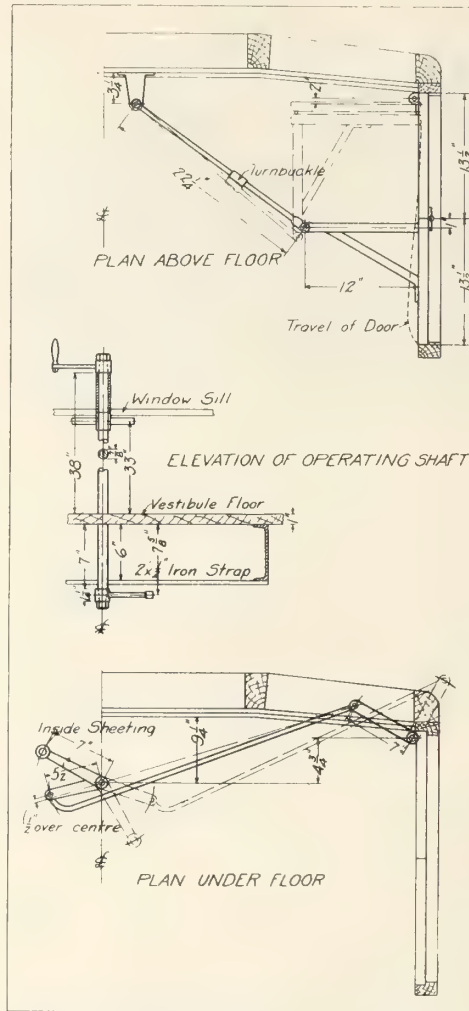
The proposal made by the North Lethbridge Association to reduce the fares to 8 tickets for 25c. was decided against by the commissioners after a long discussion, during which it was shown that the railway would have had to carry 334,000 passengers in addition to the 917,000 carried during 11 months of this year, to give the same revenue.

We are advised that the one man one car system is giving good satisfaction and operating expenses were reduced \$9,000 during nine months of 1914. Of course that cannot all be credited to the one man system, because the car mileage has also been reduced. At present the operating expense is just about equal to the revenue.

### Door Operating Mechanism on the Montreal Tramways Company's Cars.

During the last three years, all the new cars added to the Montreal Tramways Co.'s rolling stock, have been of steel frame construction, of a design essentially the same as the first of the type which was described in detail in Canadian Railway and Marine World, Mar., 1912. Since the delivery of the first lot, a number of changes in detail have been made from time to time, and among these is the door operating mechanism.

In the original cars of this design, there was a single leaf swing door from the front vestibule. In more recent cars this has been replaced by a two leaf door, operating with the mechanism shown in the ac-



Door Operating Mechanism for Two Leaf Door on Montreal Tramways Co.'s Cars.

companying illustration. This door is of the folding type, operating without guides, thereby eliminating the possibility of the doors jamming. The inner leaf of the two leaf doors is hinged to the front corner post of the vestibule by a long rod, to which it is secured, and which passes through the vestibule floor, the lower end having a 7 in. crank fastened to it. The operating shaft is in the centre line of the car, midway between the controller and air brake valve. It is a 3/8 in. round shaft with a 7 in. crank handle on the upper end, and a 5 1/2 in. crank on the lower end, the latter connected to the door hinge shaft crank by a 3/4 in. rod, threaded on one end for adjustment. Through this link, the inner leaf of the door may be swung open or closed. To guide the outer leaf of the door, which is hinged to the inner leaf, at the top of this leaf there

is an A frame, standing out 12 ins. from the door, connected by a 22 1/4 in. adjustable rod to an anchor in the front vestibule wall. This restrains the movements of the outer leaf so that its outer edge is in a line approximately parallel to the car side, folding in place against the front vestibule wall.

The several links as mentioned may be adjusted as required, for close fitting of the door. The under floor link is made with an offset inner end, so that when the door is closed, that end is just over the centre 1/2 in., automatically locking in the closed position. This design of door operating mechanism has been worked out by D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co., to whom we are indebted for the data on which this article is based.

### Windsor, Essex and Lake Shore Rapid Railway Appointments.

Consequent on the accidental death in December of A. W. Westman, Superintendent, A. Eastman, Vice President and General Manager, has made the following appointments:

C. P. Cooper has been appointed Superintendent, in charge of general operation. He has been with the company in various capacities from its construction days, and has been Chief Dispatcher for 4 years.

W. W. Chisholm, heretofore Chief Engineer of Power Plant, has been appointed Electrical Engineer, with supervision over power house, rolling stock and line Department. He has been with the company for 7 years.

A. Baltzer, heretofore Shop Foreman, has been appointed Master Mechanic, in charge of shops and all work in connection therewith.

A. R. Keele, heretofore Assistant Dispatcher, has been appointed Chief Dispatcher, in charge of train crews and train movements.

W. Long has been appointed Assistant Dispatcher. He was at one time with the company in the same capacity but has been in business for himself of late.

C. Loop, who has been acting Roadmaster for the past year, has been appointed Roadmaster, with charge of tracks and all work in connection with same.

J. L. Baird, heretofore Assistant Secretary and Treasurer, has also been appointed Auditor, in charge of accounts, Kingsville office, and all work in connection with same.

H. McDougall has been appointed Line Foreman, in charge of line department.

The Montreal Tramways Co.'s appeal against a judgment in favor of W. Lefevre was argued Jan. 19, in the Appeal Court, Montreal. Lefevre sought \$1,500 damages, claiming that on June 11, 1912, while a passenger on one of the company's cars, his arm came in contact with an obstruction which caused painful wounds and damage to clothes. The company contended that Lefevre imprudently put his arm out of a window while the car was in motion, the injury and damage resulting as a consequence. Lefevre rejoined that the company should have effectively protected the window on that side of the car. The lower court awarded \$999 damages. Judgment was reserved.

Motor omnibusses are, it is said, to be installed in Chicago, Ill., where \$3,000,000 will be spent on their inauguration. They will be owned by the municipality, and a 5c fare will be charged. It is reported that similar vehicles will be used in San Francisco, Cal., to ensure adequate transportation facilities during the Panama-Pacific Exposition.



## Toronto Suburban Railway Company's Appeal Granted by British Privy Council.

The Toronto Suburban Ry.'s appeal against the Ontario Railway and Municipal Board's order, requiring it to pave portions of Davenport Road, Toronto, has been granted by the Judicial Committee of the Privy Council, in London, Eng. The case came before the Ontario Board on the application of the city, dated April 25, 1912. The city asked that the railway company be directed to reconstruct and put in a proper state of repair its track and sub-structures on Bathurst St. and Davenport road, and also the roadway used for railway purposes, and 18 ins. on each side of the tracks. The Board ordered the railway company to dig out and pave the track allowance and 18 ins. on each side with such material as the Board's engineer should direct.

The company appealed to the Appellate Division of the Supreme Court of Ontario, which held that the Board had jurisdiction to order the railway to pave and to determine the character of the pavement, but that it could not delegate this power to its engineer, and referred the matter to the Board that it might direct what kind of material should be used. The company contended that under the agreement in force between it and the municipality it was obliged only to repair the portions of the roadway, not to construct a new roadway or pavement. The difference in the cost of repairs and the cost of construction as proposed by the city is estimated by the company at \$50,000.

A Canadian Associated Press cablegram of Jan. 20, stated that the Lord Chancellor, in delivering judgment that morning, said the question which presented the real difficulty arose on the construction of the agreement made in Sept., 1899, between York Tp. Council and the railway company. The land which formed the subject of dispute was included in 1909 within the limits of Toronto corporation, which succeeded to rights and obligations of the other corporation.

Under this agreement the railway company was given the right to construct a railway along roads, including Bathurst St. and Davenport Road. The controversy which arose was substantially as follows:—"Roads in which rails had been originally laid were at that time mud roads, or at all events unpaved. Respondent corporation desired that these roads should be dug out and paved with blocks. Appellant company did not contest their liability to keep the portion of the roads between the rails and 18 ins. on each side in repair, but maintained that they were under no obligation to reconstruct this space so as to make it a roadway of improved character such as the corporation designs for the rest of the roadway on each side.

In support of their case the city relied not only on the agreement itself, but on the Ontario Railway and Municipal Board Act, and as a result of an application by the city the Board made an order directing the railway company to put tracks in proper repair, also to dig out and pave the part of the roadway used for railway purposes, the city being ordered to pave the remaining parts and the Board's engineer to supervise the carrying out of this order.

On appeal to the Supreme Court it was declared that the Board had jurisdiction to make the order, and that the word "tracks" included all that part of any roadway occupied by the railway. The portion of the order appointing the engineer to deter-

mine the kind of pavement to be used was, however, varied on the ground that it did not, as it should, in the view of the court, have done, prescribe the kind of pavement which the company lay, and it was remitted to the Board to determine what kind of pavement it should be.

The Lord Chancellor proceeded: "Their Lordships cannot give to the word 'tracks' used in the context, in which it occurs in section, the wide interpretation placed on it by the court, which extends it not only to rails, but to ground occupied not only between rails, but up to 18 ins. on each side. They think the words in section indicate an interpretation of more restricted and literal kind, and exclude from the power given by section the general roadway itself, as distinguished from rails, etc., laid upon it."

In the opinion of their Lordships the other question which arises on interpretation of clause 6 of the agreement of 1899, presents a greater difficulty, and it is only after much consideration that they arrived at a conclusion on this point. It is argued that the obligation of the railway company extends to a portion of the travelled road which the company occupies in whatever improved condition that portion may have been put, the purpose of the section being to secure that the entire roadway shall be in the same condition throughout its entire breadth.

This argument does not, however, suffice to determine the question at issue. It may well be if the roadway has been improved by the city, that the standard of repair is what is contended for, but assuming this to be so the conclusion does not warrant the further inference that the company have bound themselves to change the condition of a portion of the roadway assigned to them by paving it, and so raise the standard of their obligation. It is one thing to undertake to keep what is handed over in proper repair on the footing of maintaining it in a state into which it has been put, and quite a different thing to interpret an agreement "to keep clean and in proper repair" as imposing an obligation to lay a new pavement of a kind which did not exist and was not provided for when the agreement originally was entered into, merely because the municipal authorities have themselves thought it right to improve the remainder of the roadway.

It may well be that if the city desires to pave the whole of the travelled road they may do so at their own expense, using the powers conferred by clause 17 to take up street or road for any purposes within the province and the privileges of the municipal corporation, but the restricted language of clause 6 which imposes an obligation on the railway company appears prima facie to confine that obligation to keeping in proper repair what is already there and not to extend it to doing works which would give a portion of the road between and beside the rails a new character.

"For these reasons their Lordships are of the opinion that the Ontario Railway and Municipal Board had no jurisdiction to make the order appealed from and that the Supreme Court of Ontario was wrong in affirming that order. They will therefore advise His Majesty that the appeal should be allowed and the orders in question be discharged. The city must pay the costs of the appeal and of the appeal to the Supreme Court."

## Single Truck Cars for the Toronto Civic Railway.

Three single truck, p.a.y.e., double end operation cars have been ordered by the Toronto Civic Railway for its new Bloor St. West line, which will be similar in most particulars to those in service on the other three lines except that the latter are double truck cars. The new cars will have steel underframes, with arch roofs. The body length will be 21 ft., with 6 ft. platforms 8 ft. wide, making an overall length of 33 ft., and 34 ft. over the buffers. The car floor will be 36 ins. above the rail level, the platform, 26 ins., and the steps, 14 ins. The body will be especially wide, viz., 8 ft. 5 ins. over side sheathing. The cars will be mounted on E21 trucks, having 33 in. cast iron wheels and an 8 ft. wheelbase. The total car weight will be about 25,000 lbs.

Each car will have seating accommodation for 32 persons, in 8 cross seats in the centre of the car, with 4 longitudinal seats, seating 4 each, two at each end. The platforms will have a single door on one side, and double doors on the other, with a folding step from each, the single door with its step, to be operated by the motorman, and the double doors with their steps, to be operated by the conductor from his position inside a pipe railing. The cars will each have two 40 h. p. Westinghouse 533 form L interpole ventilated motors, operated by a C. G. E. K10 controller at each end. The seats will be of rattan. There will also be 6 automatic ventilators in the roof. The cars will be painted a dark green color outside, with an interior finish of golden oak. The ceiling will be of painted agasote. Heating will be by hot air heaters. There will be hand straws suspended from the ceiling over each longitudinal end seat. The cars are being built by the Preston Car and Coach Co. We are indebted to D. W. Harvey, Assistant Engineer, Works Department, for the foregoing information.

## Substations on the Toronto Suburban Railway.

Contracts have been let by the Toronto Suburban Ry. for three substations on its Toronto to Guelph line, at Islington, Georgetown and Guelph, Ont., the latter at the corner of Dundas Road and Bay St. The Georgetown station will have 1,000 k.w. capacity, in two 500 k.w. units, while each of the other two will have a single 500 k.w. unit, with provision for the addition of a similar unit in the future. Power will be received at 25,000 volts, a.c., 3 phase, 25 cycle, and will be stepped down and passed through 500 k.w. rotary converters, which will deliver to the line at 1,500 volts, d.c.

The three stations will be of a brick and concrete construction. The Islington station will be provided with living accommodation for the operator, either above the station or in a building adjoining. The Georgetown and Guelph stations will also contain a waiting, baggage and express rooms, and dispatching offices, providing railway station facilities. These will not be added to the Islington layout, as it is not in a densely populated district.

**Motor Busses for Toronto.** At the Toronto City Council's inaugural meeting for 1915 Mayor Church suggested that the Legislature should be asked to authorise the city to spend \$50,000 on motor busses, without the consent of the people.

The man most in demand today is the one who combines thorough training with natural executive or administrative ability.



## Semi-Steel Cars for Niagara, St. Catharines and Toronto Railway.

The Niagara, St. Catharines and Toronto Ry. has received six 55½ ft. semi steel cars for its interurban service. They have an overall height of 13 ft., with a body width of 10 ft., with underframing and sides of steel. The total weight of each car is about 75,000 lbs., and they have a seating capacity for 67 persons each. They are designed for operation in two car trains, for which purpose the front car has in addition to the main and smoking compartments, common to both classes of cars, a baggage section. The leading car has high backed seats with head roll upholstered in green leather, and the rear car is upholstered in plush. A passage way, alongside the smoking compartment, leads from the car end into the main compartment without necessitating passage through the smoking room.

The cars are finished in polished quarter cut oak, inlaid with white holly, in a mission finish, agasote headlinings and empire decks, all carried on the steel framing. The trimmings throughout are statuary bronze. Special attention has been given to the ventilation and lighting. They are also equipped with the latest type of forced draught electric heaters with thermostat control. The exterior finish is a steel gray, with black and gold lettering, which has

pany whose trains are operated either by steam or electricity seeks the Board's approval for a crossing of its tracks over the tracks of an existing railway under the Board's jurisdiction, the expense of installing the crossing and the cost of maintaining protective devices is usually put upon the junior road. The trains of the senior road are given the right of way at the crossing over trains of a similar class of the junior road. For the purpose of ensuring the rights of the senior road at the crossing, it is usual to require that the man being placed in charge of the protective devices installed at the crossing should be nominated by, or acceptable to, the senior road; but, as all the expense is placed upon the junior, the man in charge of the crossing is paid by the junior road.

"In the case before us, the Winnipeg Electric Ry., while admitting its obligation to pay the flagman at the Logan Ave. crossing, objects to carrying him on its pay roll and suggests that he should be put upon the pay roll of the senior company and that the C.P.R. should be reimbursed by the Winnipeg Electric Ry. whatever amounts it has to pay the man in wages. It is evident that the railway companies are endeavoring to avoid any legal consequences which may flow from an act of negligence of the man in charge of the crossing, which might fasten responsibility on his employer. Without expressing an opinion as to

## Mainly About Electric Railway People.

Mrs. Thomas Ahearn, wife of the President, Ottawa Electric Ry., died at Ottawa, Jan. 3. She was very active in many prominent works of a philanthropical and educational nature.

A. E. Beck, K.C., Permanent Counsel, British Columbia Electric Ry., Vancouver, who has retired to re-engage in private practice, was presented with a cabinet of silverware by the head office staff at a farewell dinner, Dec. 30.

W. P. Cooke has been reappointed Chairman of the Port Arthur (Ont.) City Utilities Commission, which controls, among other utilities, the municipal electric railway. The commission consists of four elected members, with the mayor ex officio. In future, elections will be for two year terms, and two of the members will retire each year.

William Wesley Chisholm, who has been appointed Electrical Engineer, Windsor, Essex and Lake Shore Rapid Ry., Kingsville, Ont., was born at Caradoc, Ont., Oct. 17, 1876, and entered railway service in June, 1896, since when he has been, to Apr., 1897, switchman, Michigan Central Rd., St. Thomas, Ont.; Apr., 1897, to Mar., 1898, yard conductor and Assistant Yardmaster, Toronto, Hamilton and Buffalo Ry., Hamilton, Ont.; Mar., 1898, to June, 1903, brakeman,



Two Car Train, Niagara, St. Catharines and Toronto Railway.

been adopted as standard by the company. They are also equipped with electric markers and classification lights.

The wheels are steel tired, with cast iron centres and M. C. B. journals. The electrical equipment consists of four GE219 75 h.p. motors, with type M.K. multiple unit control, the master controller having dead man release handle. The air equipment consists of the Westinghouse A.M.M. train control. They are equipped with Tomlinson radial automatic couplers, with the automatic air connecting feature. They are also equipped with straight air brakes. They were built by the Preston Car and Coach Co.

## Responsibility for Watchmen at Railway Crossings.

Following a hearing at Winnipeg, Nov. 16, 1914, D'Arcy Scott, Assistant Chief Railway Commissioner, gave the following decision, Dec. 31, respecting the responsibility for watchman at the Winnipeg Electric Ry.'s crossing over the C.P.R. at Selkirk.

"A difference of opinion as to which company should be responsible for the acts of a flagman having arisen between the Winnipeg Electric Ry. Co. and the C.P.R. Co., the matter has been referred to the Board. The question has been before the Board on several occasions. Where a railway com-

pany whose trains are operated either by steam or electricity seeks the Board's approval for a crossing of its tracks over the tracks of an existing railway under the Board's jurisdiction, the expense of installing the crossing and the cost of maintaining protective devices is usually put upon the junior road. The trains of the senior road are given the right of way at the crossing over trains of a similar class of the junior road. For the purpose of ensuring the rights of the senior road at the crossing, it is usual to require that the man being placed in charge of the protective devices installed at the crossing should be nominated by, or acceptable to, the senior road; but, as all the expense is placed upon the junior, the man in charge of the crossing is paid by the junior road.

"In cases of this kind I think the proper practice is to have the man in charge of the crossing on the junior company's pay roll. If the man nominated by the senior company is not acceptable to the junior company, it is a simple matter for the two companies to find a man who would be acceptable to both.

"It will probably be sufficient for a copy of this memorandum to be sent to the parties interested; but, if either of them requires a decision put in the shape of an order, an order can go accordingly. I want to point out that the above does not apply in the case of a street railway which is owned and operated by a municipality and is operated on a municipal highway. In such cases a different principle applies."

Michigan Central Rd., St. Thomas, Ont.; May, 1905, to Nov., 1907, Assistant Chief Engineer, City Pumping Station, St. Thomas, Ont.; Nov., 1907, to Jan. 1, 1915, Chief Engineer, Power Plant, Windsor, Essex and Lake Shore Rapid Ry., Kingsville, Ont.

A. W. Westman, Superintendent, Windsor, Essex and Lake Shore Rapid Ry., who was electrocuted at Kingsville, Ont., Dec. 21, as stated in Canadian Railway and Marine World for January, was born in London Tp., Middlesex County, Ont., Aug. 1, 1879. He started work with the London, Ont., Street Ry. in March, 1897, as a pitman, and in 1900 was put on overhead trolley construction and was subsequently appointed Line Foreman. In March, 1908, he went to the Windsor, Essex & Lake Shore Rapid Ry. as Superintendent of Shops at Kingsville and in July, 1909, was appointed Superintendent in charge of line, track equipment and operation, in which position he succeeded in solving some of the most important problems in connection with the operation of the single phase system.

The proper forging heat for high speed steel is said to be between 1,650 and 1,900 degrees Fahr., dependent on the different makes of alloys. Forging below these temperatures will cause the crystals to crush and rupture.



## British Columbia Electric Railway's Annual Report.

Following are extracts from the report of the year ended June 30, 1914, presented at the annual meeting in London, Eng., recently:—The directors regret that the report is not of so satisfactory a character as those which the shareholders have been accustomed to receive in the past, and that, in order to maintain the usual dividends, it will be necessary to supplement the profits by a transfer of £10,000 from the reserve. The directors recommend this course with some hesitation, in view of the extremely unfavorable outlook for the current year caused by the war, but they desire to avoid throwing any additional hardship upon the stockholders at this time, and for that reason propose to draw upon the reserve. At the last annual meeting it was pointed out that the earnings for the year now under review, were being adversely affected by the conditions then prevailing. The depression in trade, to which reference was then made, unfortunately became accentuated as the year advanced, and rigid economy has been necessary to achieve the results shown by the accounts. Further economies are still being effected wherever it is possible to put them into force.

The following charges have been made against the revenue account for the year:—

Provision for renewals maintenance .....	£149,921	10	8
Added to capital amortization .....	2,455	6	4
<b>Total .....</b>	<b>£152,376</b>	<b>17</b>	<b>0</b>

The net profit for the year, after making the above deductions, amounts to .....	£393,956	7	8
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Add—			
Balance brought forward from last year .....	9,518	19	4
Amount transferred from reserve fund .....	10,000	0	0
	<b>£413,475</b>	<b>7</b>	<b>0</b>

Deduct—			
Interest on debentures and debenture stock to June 30, 1914 .....	£132,990	19	5

Dividends already paid—			
On 5% cumulative perpetual preference stock for the year to June 30, 1914 .....	72,000	0	0
On preferred ordinary stock for the year to June 13, 1914 .....	86,400	0	0
On deferred ordinary stock for the six months to Dec. 31, 1913 ..	57,600	0	0
	<b>348,990</b>	<b>19</b>	<b>5</b>

Leaving available for further distribution .....	£ 64,484	7	7
From this the directors have recommended the payment of a dividend on the deferred ordinary stock at the rate of 8% per annum for the six months ended June 30, 1914, making 8% for the year .....	57,600	0	0

To carry forward to next account .....	£6,884	7	7
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Owing to the depression, the large employers of labor in British Columbia have been temporarily forced to postpone all new work, and as a result it is reported that there has been a decrease in the population of Vancouver and the neighboring districts of approximately 20,000 inhabitants; and there has consequently been a decrease of over 8,500,000 in the number of passengers carried during the year. The financial effect of this decrease in passengers would have been even more marked but for the small advance in fares put into force in Sept., 1913. The directors anticipated some

improvement during the latter half of the present year, but these hopes were extinguished on the outbreak of war. All companies operating in a new country have at times to face periods of severe reaction in the development of their business. As a result of the war commercial conditions in British Columbia could not well be worse than they are at present, and the revival in trade may be greatly retarded. Stockholders must consequently be prepared for a drastic reduction in future dividends, but the directors believe that the halt in the development of the Province will, in the end, result in more stable conditions.

During the past year the expenditure on capital account has been reduced to a minimum. A public utility company must continuously incur certain capital outlay to comply with its franchise obligations, but the policy of limiting expenditure to absolute necessities will be rigidly followed until the return of more prosperous times.

In reviewing the work which has been accomplished, the Chief Engineer reports that the plant is in a satisfactory state of efficiency, and that the company is in an excellent position to profit by the improvement in the business conditions of B. C. when it takes place.

It is with the greatest regret that the directors announce that J. Buntzen, who retires at the annual meeting, has decided not to seek re-election, owing to his continued residence in Denmark. Mr. Buntzen has, however, consented to accept the position of adviser to the directors, and they intend to appoint him. The benefit of his invaluable advice and experience will thus be available to the company. During the first eight years of the company's existence Mr. Buntzen was General Manager in British Columbia, and the company owes him a debt of gratitude for his many years of close devotion to its affairs and for the benefits secured by his clear judgment and foresight. In order to be kept in the closest touch with the conditions prevailing in British Columbia and with the details of the company's business, the board has appointed R. H. Sperling (who has for the past nine years held the position of General Manager in British Columbia) as Assistant to the Chairman and has elected him a director in succession to Mr. Buntzen. The Board has appointed to succeed Mr. Sperling as General Manager, Geo. Kidd, formerly Secretary and recently Comptroller to the Company. The board are confident that they have secured a very capable successor to Mr. Sperling. The directors again have pleasure in expressing their appreciation of the loyal and satisfactory services rendered by the management and staff in British Columbia.

Although the Directors recognize that the immediate future must be a period of adversity, during which a large reduction of dividends will be necessary, they see no reason to lose confidence in the future of the company's undertakings.

The comparative statement appended to the report shows the income, after charging renewals maintenance to have been \$410,229 in 1913-14 against \$401,836 in 1912-13. The number of passengers was 63,429,023 in 1913-14 against 71,973,822 in 1912-13.

The following expenditures were made on capital account:—Rolling stock, \$718,543.32; permanent and double tracking and sundry improvements, \$267,002.01; track extensions, \$206,988.11; lighting extensions, \$79,427.60; power extensions, \$50,477.45; steam plant, \$44,788.39; lands and buildings, \$512,900.07; electrical machinery, \$477,

995.77; extending light and power system, \$135,597.89; North Vancouver, rolling stock, meters, transformers, and initial installations, \$2,784.48; sundries, \$48,641.66; Transmission lines and railway feeders, \$25,856.59. Total, \$2,571,003.24. In addition to the above there was a capital expenditure of £317,386 9s. 9d. by subsidiary companies.

The chairman, R. M. Horne-Payne, was unable to attend the annual meeting, but had prepared some remarks, which were read by T. Blundell Brown. The report and accounts were adopted and the retiring directors, R. M. Horne-Payne and R. H. Sperling, were re-elected.

### Electric Railway Notes.

The City of Brantford has received six cars for its municipal electric railway, from the Preston Car and Coach Co.

The Regina, Sask., Public Utilities Committee has directed that monthly statements showing receipts and expenditures on the Municipal Ry. be presented.

The Niagara, St. Catharines and Toronto Ry. has received 2 suburban cars, 55½ ft. long, the balance of an order for six, from the Preston Car and Coach Co.

Mayor Spence, in his inaugural address to the Brantford, Ont., City Council, Jan. 10, urged the appointment of a Public Utilities Board to manage the municipal railways and other public utilities owned by the city.

The Toronto Suburban Ry. has installed a telephone dispatching system on its Weston and Woodbridge Division. Cars are being operated between West Toronto and Weston every quarter of an hour, and to Woodbridge every two hours.

The Mayor of Toronto proposes to ask the Ontario Legislature for legislation to nullify a recent decision of the Imperial Privy Council, which decided that the Toronto Ry. could not be compelled to build and operate lines outside the city limits as defined in 1891.

The British Columbia Electric Ry. started operating its cars in Victoria, B.C., on a new schedule, Jan. 4. One or two services have been abandoned, and on other routes the interval between cars is 15 instead of 10 minutes. On Sundays the service starts at 9 a.m. and ceases in the evening an hour earlier than formerly.

The Saskatoon, Sask., City Council, Jan. 7, in passing the street railway estimates for this year, desired to have the Commissioners bring in a detailed report on the public utilities, of which the municipal railway shows a loss. Press reports state that "a general shake up of far reaching importance is due very shortly." A telegraphic dispatch, dated Saskatoon, Jan. 10, and published in outside papers, states that notice of motion has been given for an early meeting of the Council, to consider the selling of the municipal railway and the granting of a franchise to a private company.

In connection with the recent negotiations between the Toronto City Council and the Toronto Ry. and Toronto Electric Light Cos., concerning the proposed purchase of the two companies by the city, John Mackay and Co., Toronto, have presented a claim on the city for \$42,546.50, including a personal fee of \$37,500, and also fees for counsels' opinions. City Counsel Geary has given his opinion that the city is not liable, claiming that Mr. Mackay was not legally retained. In addition to the foregoing amount, expenditures during the period negotiations were in progress, total \$25,123.44, including Bion J. Arnold \$10,744.49; J. W. Moyes \$2,200; W. A. Ross and Co. \$6,948.95; D. E. Thomson, K. C. \$5,200, and miscellaneous \$30.



## Electric Railway Projects, Construction, Betterments, Etc.

**Brantford Municipal Ry.**—The Brantford City Council is operating the Brantford St. Ry. and the Grand Valley Ry., the latter of which extends from Brantford to Galt, Ont., under the title of the Brantford Municipal Ry. For legal purposes, the old titles are not affected. The official inauguration of the lines under municipal ownership was celebrated Dec. 18, when the Commissioners gave the Mayor and a large number of guests a trip and entertained them at luncheon. Hydro Electric Power Commission's power is used on the Galt section of the line, and over the Paris section from Jan. 1. In Brantford, power is secured from the Dominion Power and Transmission Co. Hydro Electric Commission's power. (Jan., pg. 28.)

**British Columbia Electric Ry.**—During 1914, the company expended about \$90,000 on laying down permanent tracks, principally on Fort St. and Pandora Ave., Victoria, B.C., and \$12,000 was expended on the betterment of other tracks in the city.

During 1914, the company laid 7.83 miles of permanent track in Vancouver and suburbs, to replace temporary tracks, all the work having been done in connection with the city's street paving operations. In Victoria, in addition to 1.05 miles of ordinary reconstruction work, the company replaced 2.49 miles of temporary tracks with permanent ones. New lines were built as follows:—Vancouver and suburbs, 2.13 miles; New Westminster and suburbs, 0.50 mile; Victoria and suburbs, 1.29 miles; interurban lines, 5.14 miles; total, 9.06 miles. The single track mileage of the company's lines at Dec. 31, 1914, was:—

	Miles.
Vancouver and suburbs .....	97.39
New Westminster and suburbs .....	16.66
Victoria and suburbs .....	41.55
North Vancouver and suburbs .....	11.07
Interurban lines .....	180.38
Total .....	347.05
(Nov. 1914, pg. 516.)	

**Eastern Ontario Electric Ry.**—The Ontario Legislature is being asked to extend the time within which this projected railway from Cornwall to Toronto, and from Ottawa to Brockville, with branches, may be built. The company was incorporated in 1909, with head office at Cobourg, Ont., the provisional directors being E. C. Rendell, Transportation Superintendent, Mobile and Ohio Ry., Mobile, Ala.; Jas. Duncan, President, Litchfield and Madison Ry., Alton, Ill.; W. A. Robinson, New York; C. H. Krause, St. Louis, Mo.; E. J. Krause, St. Louis, Mo.; W. H. Lincoln, Boston, Mass.; G. E. Smith, Boston, Mass. In 1913, an extension of time for construction was granted and the provisional directors changed by striking out all but E. C. Rendell, and G. E. Smith, and substituting the following:—H. Hastings, C. S. Foss, G. T. Taylor, Boston, Mass. The company now desires to substitute the name of L. R. Murdock, Boston, in place of H. Hastings. The notice of application is signed by G. E. Smith, for the company. (Mar., 1913, pg. 141.)

**Guelph Radial Ry.**—We are officially advised that a 1,200 ft. switch has been built on Suffolk St., Guelph, Ont., to connect with the G.T.R. It will not be used for traffic until the spring. (Dec., 1914, pg. 553.)

**Humber Valley Electric Ry.**—The Ontario Legislature is being asked to extend the time for the construction of this projected railway from Dundas St., Lambton Mills, along the west bank of the Humber River to Bloor St., Toronto, crossing to the east bank of the river and continuing to the Lake Shore Road, with branches not to exceed three miles in length. W. N. Ferguson, To-

ronto, solicitor for company. (May, 1913, pg. 235.)

**Hydro Electric Power Commission of Ontario's Projected Railways.**—The question of the building of an electric railway from the Niagara frontier, via Hamilton, to the Georgian Bay is under the Commission's consideration. Controller Morris, Hamilton, is reported to have stated, Jan. 4, that F. A. Gaby, Chief Engineer of the Commission, had shown him plans for a line from Queenston and Dunnville, through Hamilton, to Georgian Bay, and that the surveys had been completed for this and connecting lines from Dunnville to Beamsville, from Queenston to Beamsville, and from Guelph to Toronto; that preliminary surveys had been made on other sections of the district to be served, and that the surveys would be resumed almost immediately. The construction of the line, Mr. Morris said Mr. Gaby informed him, would depend entirely on the action Hamilton was prepared to take.

The hydro electric bylaw was defeated by the ratepayers of Newmarket, Ont., Jan. 3, by 398 to 287 votes. T. H. Lennox, M.L.A., is reported to have said: "Newmarket defeated the Hydro radial bylaw last summer, and this additional reverse would seem to exclude that area from the radial zone." The bylaws voted on at the recent municipal elections were enabling, and money by-laws for the power lines. Representatives of the municipalities which have accepted the radial railway bylaws are expected to meet at an early date to discuss the situation. Newmarket village and Uxbridge township are the only places where the by-laws were defeated last summer.

Arrangements are being made for a meeting at London, Ont., of representatives of the townships interested in the building of an electric railway from London to St. Marys and Exeter, under the Commission. (Dec., 1914, pg. 553.)

**Montreal and Southern Counties Ry.**—The Montreal City Council has decided to grant the company an extension of time for the laying of tracks across McGill St. indefinitely. The agreement called for the starting of work by Jan. 1. It was subsequently found that the Board of Railway Commissioners could not deal with the matter until after that date, and the Montreal Tramways Co. started proceedings to have the agreement set aside, hence the necessity for the postponement of date fixed for starting work. (Dec., 1914, pg. 553.)

**Montreal Tramways Co.**—The Quebec Legislature is being asked by the town of Mount Royal for an extension of time within which it may make arrangements with the M. T. Co. and the Montreal Public Service Corporation for the building of electric railways, etc.

The Montreal Board of Control, Jan. 4, in accordance with a resolution passed Dec. 30, began a systematic study of the M. T. Co.'s franchises, etc., with a view of reaching a definite solution of the whole question. The documents involved include 23 separate franchises, granted by the various municipalities now forming the city of Montreal; numerous engineering and statistical reports; and several suggested plans for settling the matters involved, and they make a volume of over 600 pages. At the discussion on Jan. 9, the City Attorney was directed to give an opinion as to the various franchises, the rights comprised in them, and the legal value of the same, exclusive of the renewal of bylaw 210 and its amendments.

The Board of Control has passed a resolution urging the City Council to arrange for the construction of a tunnel under the La-

chine Canal, near the present Wellington Bridge, and to arrange for the cooperation of the M. T. Co. and the Dominion Government in the work. The tunnel would replace the bridge. The Council, Dec. 11, voted \$1,500 to secure the service of an expert to aid E. R. MacLeod, the city engineer in charge of railway work, to prepare plans. (Dec., 1914, pgs. 554 and 555.)

**Niagara, Welland and Lake Erie Ry.**—Application is being made to the Ontario Legislature for the confirmation of an agreement granting the right to the company to operate a surface street railway in Welland, and the confirmation of a second agreement fixing the assessment of the company's property there at specific sums for five year periods, terminating in 1934. J. F. Gross, Welland, Ont., solicitor for company. (Mar., 1914, pg. 135.)

**Ottawa Electric Ry.**—The franchise for the operation of an electric railway, granted by the village of Hintonburg, Ont., which now forms part of the city of Ottawa, expires May 11. The lines affected by the franchise are those from the west side of Somerset St. bridge, along Holland Ave. as far as the G.T.R. bridge on the way to the Experimental Farm. From Holland Ave. to the city limits westerly, the company's lines are on their own right of way, so are not affected by the agreement. The city proposes to take up the consideration of the matter at once. (Dec., 1914, pg. 553.)

**Pictou County Electric Co.**—We are officially advised that the company has under consideration the building of an extension from Potiers bridge to Pardale, N.S., half a mile. L. T. Flaherty, New Glasgow, N.S., is Manager.

**St. John's, Newfoundland.**—Press reports state that the Reid Newfoundland Co. proposes to build about a mile and a half of additional track during this year. W. D. Reid is President and General Manager, St. John's, Nfld.

**Toronto.**—A proposition has been made by E. A. Wallberg, 11 Adelaide St. E., to the City Council for the construction, at an estimated cost of \$200,000, of an electric railway from Leaside to Merton Ave., North Toronto.

**Toronto Civic Car Lines.**—The estimates on capital expenditure prepared for the Toronto City Council include \$300,000 on account of street railway repairs and \$800,000 on account of the construction of new city owned lines.

At the municipal election, Jan. 1, the ratepayers voted in favor of raising \$105,000 for the building of a civic line from St. Clair Ave. southerly, by way of Lansdowne Ave., to Bloor St. West, to connect two of the car lines operated by the city; also, of raising \$320,000 to build and equip a line in North Toronto, from the C.P.R. tracks at Alcorn Ave., northerly by Mount Pleasant cemetery and Mount Pleasant Road to Randeigh Ave. The ratepayers also voted in favor of the purchase by the city of that portion of the Toronto and York Radial Ry. from Queen St. East, along Kingston Road, to Main St., about 1¾ miles.

The Toronto Lacrosse and Athletic Association and other ratepayers in North Rosedale, are applying to the Ontario Legislature for an act "to compel the city of Toronto to lay down and operate a municipal car line from the south limit of the North Glen Road bridge, Ward 2, along Glen Road to Summerhill Ave., south on McLellan and Scholfield Aves., east on Highlands Ave., and south on Glen Road to the place of commencement; to compel the city to reconstruct the North Glen Road bridge, so as to accommodate a double line of car tracks; and to enable the city to issue debentures for the cost of the car line and the reconstruction of the bridge, without the consent



of the ratepayers, inasmuch as the ratepayers voted before affirmatively for the said car line."

**Toronto Eastern Ry.**—Application is being made to the Dominion Parliament for an extension of time for completing the line authorized to be built from Toronto easterly to Cobourg, Ont., with branches as follows:—From Cobourg or Port Hope northerly to Peterborough; from Scarborough tp. to Markham, Stouffville or Uxbridge; from Oshawa northerly via Lake Scugog to Lindsay; from Oshawa southerly to Lake Ontario. Young and McEvoy, Toronto, solicitors for company. (July, 1914, pg. 356.)

**Toronto Suburban Ry.**—When work ceased for 1914 on the extension to Berlin, track had been laid from near Lambton to mileage 43.50, that is 41.50 miles of steel had been laid. Of this, 15 miles had been ballasted and the poles had been put up on 16 miles. We are officially advised that it is intended to start operations immediately and that it is hoped to have the line in operation to Georgetown by July and to Guelph by October. Power converter stations are to be built at Islington, Georgetown and Guelph.

Plans for the bridge over the Humber River have been prepared. It will have a total length of 502 ft. and will consist of four plate girder spans, resting on three steel towers and two concrete abutments. It will be 12 ft. lower than the C.P.R. double track bridge completed recently. E. T. Wilkie is Chief Engineer. (Nov., 1914, pg. 517.)

**Toronto and York Radial Ry.**—The Ontario Legislature is being asked to extend the time for the building of the various lines and branches authorized, and for power to lay out a double track line on Yonge St., Toronto, from the company's southerly terminus to the north limits of the city, subject to such an agreement with the city of Toronto as shall be approved by the Ontario Railway and Municipal Board. (Sept., 1914, pg. 431.)

**Tramways Limited.**—The agreement between the Edmonton, Alberta, City Council and the company was ratified by the ratepayers, Dec. 14, 1914, the voting being: For the bylaw, 8,849; against, 4,499; majority in favor, 4,350.

The directors are:—A. E. Farncomb, President; H. Stutchbury, S. D. Hogan, G. Creedwell, S. Carson, W. Golley, S. H. Smith.

Local press reports state that the company has already graded several miles from the city limits, and has bought right of way from the landholders along the side of the road allowance. (Jan., pg. 28.)

## Electric Railway Finance, Meetings, Etc.

**British Columbia Electric Ry.**—The percentages payable to Vancouver for 1914 were \$69,503.01, against \$81,166.73 for 1913. The number of passengers carried decreased from 46,731,449 in 1913 to 37,549,575 in 1914.

**British Columbia Electric Ry.** and allied companies.—Gross earnings for November \$648,485; operating expenses, maintenance, etc. \$501,224; net earnings \$147,261, against \$746,152 gross earnings; \$544,508 operating expenses, maintenance, etc.; \$201,644 net earnings, for Nov. 1913. Aggregate gross earnings for five months ended Nov. 30., \$3,324,836; net earnings \$762,931, against \$3,760,507 aggregate gross earnings; \$976,721 net earnings, for same period 1913.

**Cape Breton Electric Co.**—Gross earnings for November, \$30,044.59; operating expenses and taxes \$17,847.12; net earnings \$12,197.47; interest charges \$5,227.58; balance \$6,969.89; bond sinking and improve-

ment funds \$1,373.34; balance for reserves depreciation, etc. \$5,596.55, against \$34,848.93 gross earnings; \$18,080.19 operating expenses and taxes; \$16,768.74 net earnings; \$4,808.33 interest charges; \$11,960.41 balance; \$1,190 bond sinking and improvement funds; \$10,770.41 balance for reserves depreciation, etc., for Nov. 1913. Aggregate gross earnings for 11 months ended Nov. 30., \$321,510.99; net earnings \$130,004.17; interest charges, etc., \$71,540.07; net balance \$59,826.08, against \$343,371.06 aggregate gross earnings; \$150,218.49 net earnings; \$66,896.15 interest charges, etc.; \$83,322.24 net balance for same period 1913.

**Edmonton Radial Ry.**—The financial report for 1914 laid before the Edmonton, Alberta, City Council contains the following:—"The year's operations in the street railway department have added approximately \$220,000 to the accumulated deficit at the beginning of the year of \$504,000. This deficit includes over \$250,000 for depreciation. The total receipts during 1913 were \$632,008.82, and in 1914 \$643,055.53, an increase in passenger and freight receipts of over \$11,000."

**London St. Ry.**—Gross earnings for December, \$33,922.34; expenses \$24,058.86; net earnings \$9,863.48, against \$29,816.72 gross earnings; \$21,330.57 expenses; \$8,486.15 net earnings for Dec. 1913. Aggregate gross earnings for 12 months ended Dec. 31, \$373,184.72; expenses \$265,503.39; net earnings \$107,711.33.

**London and Port Stanley Ry.**—The London (Ont.) City Council, at its inaugural meeting, Jan. 11, made no change in the London Railway Commission, which has charge of the L. & P. S. Ry. The members are Sir Adam Beck, chairman, P. Pocock, M. D. Fraser and W. Spittal.

**Montreal Tramways Co.**—A report presented to the Montreal Board of Control, Jan. 7, claimed that the M.T. Co. was indebted to the city as follows:—Taking up snow in 1912-13, \$20,696.45; in 1913-14, \$95,703.12; company's share of St. Lawrence Boulevard tunnel, \$15,000; percentage on receipts for year ending Oct. 1, 1914, estimated, \$472,511; total, \$603,911.57. The City Treasurer stated that the city was being compelled to pay large sums in interest on account of the company not paying promptly.

E. A. Robert, President, and J. L. Perron, K.C., had a conference with the Board of Control, Jan. 20, to arrange a settlement of all financial matters in dispute between the company and the city.

**Moose Jaw Electric Ry.**—The directors announced, Jan. 7, according to a press dispatch, that owing to the general depression through the west, and the decrease in traffic, they were unable to declare the semi-annual dividend but that the resumption of dividend payments was not far off.

**Saskatoon Municipal Ry.**—The estimates for this year, presented to the Saskatoon, Sask., City Council, Dec. 31, show as estimated receipts, \$136,405, with an expenditure of \$173,405, distributed as follows:—Maintenance of ways and structures, \$5,600; maintenance of equipment, \$10,500; traffic expenses, \$900; conducting transportation, \$95,300; general and miscellaneous, \$7,905; capital charges—interest, sinking fund and depreciation, \$56,200. Estimated deficit, \$36,000.

Receipts for Dec., 1914, \$12,900.75, against \$14,039.58 for Dec., 1913; operating expenses, \$11,925.60; capital charges, \$4,424.10; deficit, \$3,448.95. Total car mileage, 58,781, against 60,133 in Dec., 1913. On the Sutherland line the receipts were \$713.97; operating charges, \$808.55; the capital charges, \$101; deficit, \$195.58; passengers carried, 13,631.

A statement made, Jan. 6, shows the result of the first four days operation of the street cars under the ticket system, as compared with the corresponding four days of Dec., 1914. The number of passengers carried was 31,612, representing \$1,375, against 29,489 passengers and \$1,483 under the cash fare system previously in operation. The \$1,375 mentioned represents the value in cash of the tickets deposited in the fare boxes, and not of the strips of tickets sold.

**Sherbrooke Ry. and Power Co.**—Gross earnings for five months ended Nov. 30, 1914, \$63,065.07; operating expenses \$37,482.45; net earnings \$25,582.62, against \$61,416.54 gross earnings; \$36,812.45 operating expenses; \$24,604.09 net earnings, for same period 1913.

**Toronto Ry., Toronto and York Radial Ry.** and allied companies.—Gross earnings for November \$824,634; operating expenses, maintenance, etc., \$431,109; net earnings; \$393,525, against \$849,279 gross earnings; \$409,973 operating expenses, maintenance, etc.; \$439,306 net earnings, for Nov. 1913. Aggregate gross earnings for 11 months ended Nov. 30, \$9,296,377; net earnings \$4,531,278, against \$8,893,984 aggregate gross earnings; \$4,438,524 net earnings, for same period 1913.

The Toronto Ry.'s gross receipts for December were \$497,424.20, compared with \$523,829.17 in Dec. 1913. The percentage paid to the city for December was \$59,610.68 against \$65,685.99 in Dec. 1913. The aggregate gross receipts for 1913, were \$6,134,912.15 against \$6,049,018.92 for 1913. The city percentage for 1914 was \$953,940.24, an increase of \$39,949.31 over the previous year.

**Winnipeg Electric Ry.**—Gross earnings for November, \$330,398; operating expenses \$206,394; net earnings \$124,004, against \$360,082 gross earnings; \$198,874 operating expenses; \$161,208 net earnings, for Nov. 1913. Aggregate gross earnings for 11 months ended Nov. 30, \$3,732,901; net earnings \$1,547,412, against \$3,698,831 aggregate gross earnings; \$1,658,193 net earnings, for same period 1913.

**Winnipeg Electric Ry.**—An issue of \$1,500,000 of one and two year 6% notes has been placed on the Chicago, Ill., Exchange by W. A. Read & Co. The notes have been issued to pay off the floating indebtedness.

The City Treasurer reported, Jan. 16, that the company's receipts, upon which the city is entitled to 5% amounted during 1914 to \$2,320,538.13, five per cent. on which is \$116,026.90. In addition to this the city is entitled to \$20 for each car operated, and it is estimated that 310 cars will be paid on, making \$6,200, or a total of \$112,226.90; about \$3,000 less than in 1913.

**Brandon Municipal Ry. Wages.**—As stated in Canadian Railway and Marine World for January, the management reduced the car hours from 18 to 17 hours a day and paid motormen 8½ hours each, not allowing for reporting time, which is 10 minutes. As stated, the motormen sent a request to the City Council to be paid for reporting, and also asked 9 hours' pay. We are officially advised that the City Council acceded to the request, and that the line is running 18 hours a day again. Ten minutes is allowed for reporting at the car barn only, and the rate of wages is 30c. an hour. Conductors are not employed, the one-man car system having continued in operation since Feb. 12, 1913.

Centre entrance stepless cars are to be put in operation as trailers on the Detroit United Ry., Detroit, Mich. They will be built of steel, the point of entrance being 14 ins. above rail level with an entrance step of 9 ins.



### Electric Railway Track Laid in 1914.

The following table gives information contained in replies received to Canadian Railway and Marine World's annual circular as to new track laid in 1914. The figures show a total of 80.60 miles against 204.19 in 1913 and 106.56 miles in 1912:—

	Miles.	Miles.
<b>British Columbia Electric Ry.</b>		
Vancouver and suburbs ..	2.13	
New Westminster ..	0.51	
Victoria and suburbs ..	1.29	
Interurban lines ..	1.21	
<b>Fort William Electric Ry.</b>		5.14
Extensions ..		2.00
<b>Guelph Radial Ry.</b>		
Suffolk St. switch to G.T.R. ....		0.50
<b>Hamilton St. Ry.</b>		
Extensions, Kenilworth Ave., etc. ....		2.30
<b>Montreal Tramways Co.</b>		
Various extensions ..		5.00
<b>Moose Jaw Electric Ry.</b>		
Boulevard Heights extension ..	1.00	
Extension on Hall St. ....	1.00	
<b>Port Arthur Electric Ry.</b>		2.00
Extensions ..		2.00
<b>St. John Ry.</b>		
Kanes Corner extension ..		1.50
<b>Saskatoon Municipal Ry.</b>		
Extension on Ave. 26 ..		2.00
<b>Suburban Rapid Transit Co.</b>		
Extensions near Winnipeg ..		1.37
<b>Toronto Eastern Ry.</b>		
Extension ..		1.73
<b>Toronto Suburban Ry.</b>		
Near Islington to mileage 43.50 ..		41.50
<b>Winnipeg Electric Ry.</b>		
Various extensions ..		7.56
<b>Winnipeg, Selkirk and Lake Winnipeg Ry.</b>		
Stony Mountain to Stonewall ..		7.50
<b>Total .....</b>		<b>80.60</b>

### Discussion of the Edmonton Municipal Railway Situation.

A summary of Commissioner Harrison's report to the Edmonton (Alta.) City Council on the Edmonton Radial Ry.'s affairs was given in Canadian Railway and Marine World for Dec., 1914, on pg. 551. The Edmonton Bulletin of Jan. 8 contained a page article by J. Chalmers, a former Commissioner, reviewing the history of the construction and operation of the line from its inception to Sept. 30, 1914.

The first section of the article deals with the earliest attempt made to obtain electric traction in Edmonton in 1893, the next attempt in 1904, when the Tretheway franchise was granted, and the subsequent resolution of the city in 1907 to undertake the construction of the line itself under the charter of the Edmonton Radial Ry. The construction of the various lines, with car barns and equipment, is then traced year by year down to the end of 1913, and for the first nine months of 1914. At that date the city owned 52.6 miles of track, for the construction and equipment of which it had issued bonds for \$3,242,538.33. On a population of 67,000 this represents a track mileage per 1,000 of 0.80 mile, and a cost of \$56,672 a mile of track. The mileage of line owned is distributed as follows:—Permanent double track, 30.9 miles; permanent single track, 1.2 miles; temporary double track, 8.8 miles; temporary single track, 10.4 miles; sidings, 1.3 miles; total, 52.6 miles.

The system has produced a deficit for every year since its opening, but Mr. Chalmers claims that this is not due to the past or the present management, but to too low a fare being charged in proportion to the cost of operation, and to the unwise and unwarranted extensions made at different times. On the first of these points Mr. Chalmers says there is really only a small part which is controllable expenditure. Out of the five cent fare 30.6% goes for capital charges; 34.1% for wages; 15%

for power charges; 12.9% for depreciation, leaving 7.4% for direct controllable charges. On the second point Mr. Chalmers refers to the Vermillion Ave. line, built in opposition to the recommendation of the Commissioner, and since removed; and the building of four extensions, on one of which there is a loss of \$16,000 a year; on another of \$17,000, and on a third the fares are not sufficient to pay for the power used on the route. Then there was the agreement with Strathcona, which when the two cities were amalgamated, called for the building of certain extensions, and necessitated the giving of one fare over the whole area.

Mr. Chalmers puts the total deficit from operation at \$574,000, and against this he places a book charge of \$246,000 for depreciations, which amount has not yet been spent. There has been paid in cash \$166,000 into the sinking fund, which will have a net shortage of \$162,000. The city charter provides the annual deficit may be liquidated in the general rate, and Mr. Chalmers thinks this might very properly have been done. He also points out that the entire cost of the system has been met by the issue of bonds, whereas in a company

### Canadian Electric Railway Association.

**PRESIDENT**—C. B. King, Manager, London Street Railway Co.

**VICE PRESIDENT**—James D. Fraser, Director and Secretary-Treasurer, Ottawa Electric Railway Co.

**HONORARY SECRETARY - TREASURER**—Acton Burrows, Managing Director, Canadian Railway and Marine World.

**EXECUTIVE COMMITTEE**—The President, Vice President, Secretary-Treasurer and

E. P. Coleman, General Manager, Dominion Power and Transmission Co.

Patrick Dubee, Secretary-Treasurer, Montreal Tramways Co.

A. Eastman, General Manager, Windsor, Essex and Lake Shore Rapid Railway Co.

H. M. Hopper, General Manager and Purchasing Agent, St. John Railway Co.

Wilson Phillips, Superintendent, Winnipeg Electric Railway Co.

C. L. Wilson, Assistant Manager, Toronto and York Radial Railway Co.

**ASSISTANT SECRETARY**—Aubrey Acton Burrows, Business Manager, Canadian Railway and Marine World.

**OFFICIAL ORGAN**—Canadian Railway and Marine World, Toronto.

system, the bond issue would have been limited, and considerable common stock issued, upon which no dividends need have been paid for some years. On the other hand, when the bonds are redeemed the city will own the entire line.

In conclusion he deprecates the making of experiments, and expresses the opinion that even with the present weight of capital charges, and high cost of operation, the line can be made to meet operating costs, if further unwise extensions are not made, or other expenditures not called for.

### Equipment for London and Port Stanley Railway.

Contracts are being placed by the London Railway Commission for the electrical equipment outlined in Canadian Railway and Marine World for December and January. The substation equipment, to be supplied by the Canadian Westinghouse Co., consists of the complete equipment for two substations, one in London, at the local hydro electric power house, and the other at St. Thomas, in the Hydro Electric Power

Commission of Ontario's substation. Each plant will have two complete 500 k.w. 1,500 volt sets, with transformers and rotary converters for receiving 13,200 volt a.c. and delivering from the rotary converters at the line voltage of 1,500 volt d.c. This contract will include the switchboards and wiring, complete.

Three 60 ton, 1,500 volt locomotives, all steel construction, as described in our December issue, will be supplied by the Canadian General Electric Co. This company will also supply complete electrical and air equipments with multiple unit control for the six motor cars. These motor cars will each have four 125 h.p. motors with dynamotor control and lighting, and a 1,500 volt air compressor. The electrical and air equipment for the three trailer cars will also be provided by the same firm.

The car equipment will consist of six motor cars and three trailer cars. Five of the motor cars will be 59 ft. 3 compartment all steel cars, as described in our January issue, the bodies for which will be supplied by the Jewett Car Co., Newark, O. For these cars there will be 5 sets of high speed interurban car trucks, to be supplied by the Baldwin Locomotive Works, Philadelphia, Pa. The sixth motor car, also 59 ft. long, will be an express car, and this, with the trailer cars, also of wooden construction, and of the same size, will be supplied complete by the Preston Car and Coach Co.

Latticed steel construction poles, spaced at 180 ft. centres on tangents, are being erected. Catenary suspension is being used, consisting of a 300,000 c.m. supporting cable, carrying a 4/0 grooved trolley wire. The track renewal work, described in Canadian Railway and Marine World for September, is practically completed, with the exception of some of the side tracks and crossings.

### Among the Express Companies.

F. Deno, heretofore route agent, Dominion Ex. Co., has been transferred to the Superintendent's office at Winnipeg.

T. H. McGarrell, heretofore route agent, has been appointed Agent, Dominion Ex. Co., North Bay, Ont., vice H. H. Carr, transferred.

W. A. Gibson, heretofore Assistant Foreign Agent, American Ex. Co., Vancouver, B.C., has been appointed Foreign Agent, Winnipeg, Man., vice G. Mitchell, resigned.

C. N. Spooner, heretofore Assistant Superintendent, Western Division, Dominion Ex. Co., has been appointed route agent at Moose Jaw, Sask., and his former position has been abolished.

The Canadian Ex. Co.'s earnings, etc., for Aug., 1914, were as follows:—Charges for transportation, \$610,098; express privileges, \$310,850; total transportation revenue, \$299,228; non transportation revenue, \$10,636; total operating revenue, \$309,864; total operating expense, \$282,815; net operating revenue, \$27,049; taxes, \$8,000; operating income, \$19,049, against \$598,397 charges for transportation; \$284,113 express privileges; \$314,283 total transportation revenue; \$18,868 non transportation revenue; \$333,152 total operating revenue; \$291,664 total operating expense; \$41,488 net operating revenue; \$5,600 taxes; \$35,888 operating income for Aug., 1913.

The Beck Manufacturing Co., Ltd., has been incorporated under the Dominion Companies Act, with \$400,000 capital, and office at London, Ont., to take over the various businesses carried on there by Sir Adam Beck and the Beck Manufacturing Co., and in connection therewith to build, own and operate vessels, wharves, docks, tramways, railway sidings, etc.



# Marine Department

## Construction and Classification of Great Lakes Vessels.

Jos. R. Oldham writes Canadian Railway and Marine World, from Cleveland, Ohio, as follows:—Referring to the interesting correspondence in your excellent journal re construction and classification of Great Lakes vessels. As the author of the Great Lakes Register of Shipping, copyrighted by me in 1893, and the inventor of the modern type of arched girder vessels, patterned in 1902, possibly you will favor me with a little space to endeavor to throw some degree of light on this subject.

Lloyds' Register had no connection with the original design or construction of these vessels. Indeed, I unhesitatingly aver that no iron bulk cargo vessel had ever been classed, or even constructed, without hold beams or pillars, prior to the advent of the modern bulk cargo vessel about 11 years ago. I may go further and state that these ships are of purely American, even of local, design.

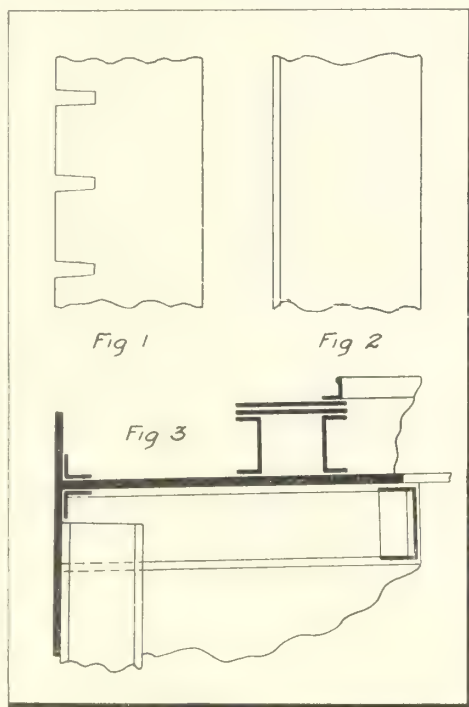
The longitudinal frame construction system tends to produce a strong ship, and possibly with economy of material, in vessels having two or more continuous decks, when supported by strong transverse bulkheads, spaced less than one and one half times the breadth of the hull apart. But for large bulk cargo ships, which have their deck cut away for more than 60% of the moulded breadth, to provide suitable hatchways for the Great Lakes trade, the absence of continuous vertical side framing, in metallic contact with the shell plating, appears to more than counterbalance the increase of longitudinal strength due to the disposal of more continuous material longitudinally, between the transverse bulkheads.

While numerous transverse bulkheads, having continuous metallic contact with the shell, may supply transverse strength to the hull, they, at the same time, destroy the continuity of the longitudinal framing, and though systematic bracketing, coupled with strong riveting, may produce efficiency, in combination with two or more decks, not abnormally cut away to provide large hatchways, no system of bracketing the abutment of frames on the bulkheads can give the same, or equal symmetrical longitudinal stiffening, to that provided by continuous stringer plates and bars. Moreover, bracket plates, with their riveting subject to tensional stress, cannot be compared with double strapped plates having rivets in double shear. As regards the transverses between the bulkheads, a notched plate, say as per accompanying fig. 1, while almost worthless to resist the vertical component of the transverse stresses, is about equally weak for resisting compression, though such notches are well adapted for resting the longitudinals on during fabrication. This, indeed, would seem to be the function par excellence of the notched transverses. An unnotched transverse plate, while not adapted to hold a frame in place during framing, as per fig. 2, does supply perfect support to the side plating in proportion to its sectional area.

Over the bottoms of lake vessels close spaced longitudinal frames are superfluous, as there is a redundancy of longitudinal strength provided by the deep plate girders between the lower and the heavy upper bottom. The deck stringer plates seem to require the assistance of strong longitudinal girders along their inner edges, as, notwithstanding their great strength, such

plates have frequently proved unequal to the work required of them. Possibly such girders as per fig. 3 would supply the requisite strength to these decks, while at the same time raising the hatches, though not beyond an impracticable height, say 22 ins. above the deck.

As regards general structural strength and weight, the longitudinal system does not appear to warrant the slightest reduction, to say the least, but such reductions as have been allowed appear to be due to the unprecedentedly favorable support accorded by Lloyds' Register to a novel system of construction, rather than to merit or structural design. This prompt and zealous approval of longitudinal construction is in marked contrast to the reception accorded to McIntyre's most excellent proposal to cut the transverse frames at the bilge and fit longi-



tudinal plates and bars, extending continuously through the bulkheads. This system only received the tardy approval of that most conservative classification association after many years had foolishly been spent to secure proper classification for vessels so constructed.

Lloyds' Register may be justified in recommending longitudinal construction for certain types of salt water vessels, provided they do not sanction such light framing as has been experimented with here. They have, however, no warrant, nor experimental illustration, to show that such construction, at least en masse, is safely applicable to the construction of Great Lakes vessels.

Two 1200 h. p. Diesel engines have been installed in two ocean-going torpedo-boat destroyers which will be launched before long on the Clyde in Scotland, for the Japanese Government. These engines will be used on cruises only, as the use of oil permits a great saving of fuel. In addition the ships have twin steam turbines, each of 1200 h. p. capacity.

## The Passage of Steamships Through the Panama Canal.

Vessels using the Panama Canal are towed through the locks, and do not pass through under their own steam. Ordinarily, six electric locomotives are used, two forward for towing and steadying the vessel in the lock chambers, two amidships for towing and afterwards checking the vessel's headway, and two aft for steadying her and checking headway. The average rise and fall in each lock is about 30 ft., so that when a vessel is at its lowest level the lead through the chocks to the locomotives on the lock walls is often very sharp, and unless the chocks are closed the line will have a tendency to slip out and damage the rail and other light construction in the vicinity. Experience has demonstrated the fact that most of the chocks and bitts are too light in construction, and that the chocks in particular should not only be made heavier and stronger so that their jaws may stand a vertical strain, but that they should be of a permanently closed character, and not be made with open jaws. In cases where open jawed chocks are installed, they should at once be replaced with closed ones, or be fitted with an appliance for closing them, taking care that the appliance itself will stand a heavy vertical strain in case the line slips from under the jaws.

With some minor modifications there are three general designs of chocks usually installed on ocean-going steamships, viz.—heavy cast iron open jawed, secured on deck or to the upper edge of the side plating; the same, but with rollers in each end, and oval closed chocks let into the side plating for leads to covered and well decks. The last mentioned give very satisfactory results, but the first two are liable to cause damage from the change both in the vertical and horizontal lead of the line, due to change in the level of the water, and the angle from the locomotives when shifting from a towing to a retarding position, or vice versa, and these should be replaced. In many cases the bitts have been found to be too light in construction, or poorly secured. They should be sufficiently strong to withstand the strain of a wire line 1½ ins. diam., with a pull of 50,000 lbs., and be firmly rivetted to the deck, and if necessary where the deck is of wood or light plating, they should have an under deck plate, or be secured between two deck frames. It has been noted that some vessels have light iron cleats rivetted to the inside of the side plating or to the deck plates in lieu of bitts. This is very unsatisfactory, as almost invariably they will not stand the strain owing to their light construction, or insecure fastening. They should be replaced by bitts.

In the installation of chocks and bitts for Panama Canal towing, attention should be given to placing the several sets in convenient and accessible places, and that in each set there should be but a short distance between the chock and its accompanying bitts. In some cases suitable bitts have been installed, but there were no convenient or accessible chocks, hence the bight of the tow rope has a tendency to slip off the bitts, and if the lead be under the rail, endangers carrying it away. In such cases chocks should be installed at once. While the Panama Canal assumes the liability for any damage to vessels during lockage, for which it may be responsible, yet it will not do so when vessels are not fitted with



proper appliances for canal towing, and where damage may result in consequence thereof, some steps should be taken immediately to remedy any defects. A vessel which presents herself for transit through the canal, which has complied with these recommendations, and which is thoroughly and strongly so equipped for towing, will not only have her passage through the several locks greatly facilitated, but will avoid the annoyance and expense due to possible damage to chocks, bitts, rail and other light equipment, for which the Panama Canal will not assume responsibility. The canal pilot will always examine each vessel's towing appliances before she enters the locks, and will not only call attention to any defects, but will gladly offer advice and suggestions toward remedying any that may be found, and at the same time will furnish the master or captain with a brief notice in reference to such alterations as in his opinion should be made before the vessel next passes the canal.

### The Kenora-Robert R. Rhodes Collision.

The investigation into the collision between the Canada Steamship Lines s.s. Kenora and F. E. Hall & Co.'s s.s. Robert R. Rhodes, near Archibald Shoal, in the St. Lawrence River, Aug. 4, was concluded recently before Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Captains F. Nash and J. McGrath, as nautical assessors. After a considerable amount of evidence had been taken the court adjourned, and on reassembling it was found that the witnesses on behalf of the Kenora were not present, due to the fact that the vessel had been ordered away on the night previous. King, counsel for Canada Steamship Lines, Ltd., owners of the vessel, expressed to the court his surprise at such action by some official of the company without consulting him, and stated that he felt his position keenly, and wished to assure the court that he was not a party to such contempt of court as had been shown. The court, after carefully weighing the evidence which it had gathered, notwithstanding the fact that some of the witnesses had not testified, considered that it had sufficient data to arrive at a decision. The judgment read that the exchange of whistles prior to the actual collision were contradictory, but notwithstanding the lack of corroboration on one side or the other, the fact remained that the faster vessel, the Kenora, was also the overtaking vessel, and therefore it was the master's duty to keep clear of the other, and by passing her so close was a dangerous and reckless manoeuvre, as the displacement wave created by her passage could have no other result than to neutralize the steering power of the Robert R. Rhodes, as well as drawing her to the Kenora, which actually happened. As to the damage suffered by the Robert R. Rhodes, the court did not think it necessary to refer to it in this judgment, as it had only to judge as to the causes responsible for the accident. The court severely reprimanded both the master, William Brian, and the pilot, D. Charland, of the Kenora, as by their manoeuvres they invited disaster. As the Kenora did not collide with the Robert R. Rhodes, the certificate of the master of the Kenora was not dealt with, but he was cautioned to be more careful in future. The court found that the Robert R. Rhodes did not contribute to the casualty, and exonerated the master and officers of all blame.

**War Insurance.**—A recent official dispatch from the British Government, announced that the insurance rate for cargo under the Government war risks insurance scheme had been reduced from 2 to 1½ per cent.

### A Dominion Government Icebreaker for Russian Service.

The Dominion Government icebreaking steamship Earl Grey, which is illustrated on this page, was sold recently to the Russian Government, and has been utilized in the White Sea, more especially to keep the port of Archangel open to as late a date as possible. She arrived at Archangel, Oct. 23, after a remarkably good run. She has been renamed Canada by the Russian Government. She was built in 1909 by Vickers, Son and Maxim, Barrow in Furness, Eng., and is of the following dimensions,—length overall 279½ ft., length between perpendiculars 250 ft., breadth moulded 47½ ft., depth moulded 26½ ft., draught normal 17 ft. 7 ins., displacement 3,400 tons, i.h.p. 6,000, speed 18 knots. The hull is subdivided into numerous water tight compartments and the doors of the principal compartments are so built that they can be closed simultaneously from the navigating bridge. A water tight bunker bulkhead extends on each side of the vessel throughout the length of the boiler rooms, and a double

usual, and the whole of it, as was also the hull, was built to the requirements of the British Board of Trade, Lloyd's Registry of Shipping, and the Canadian Steamboat Inspection Act.

While in Canada, the Earl Grey was used in the winter service between Prince Edward Island and New Brunswick, for which she was specially built. The contract price for the construction, equipment and delivery of the vessel was £103,000.

The service to Prince Edward Island is being maintained during this winter by the Dominion Government steamships Minto and Stanley, both of which are efficient icebreakers, and no difficulty in maintaining regular communication is anticipated.

The icebreaking steamship J. T. Horne, which has also been acquired by the Russian Government, as announced in a recent issue, was expected to sail from Canada for Archangel during January.

A dispatch from Archangel, dated Jan. 21, stated that the icebreaker had been disabled, and that a number of vessels had been frozen in, with little likelihood of their being released before the general breakup of the ice.



Icebreaking Steamship Earl Grey, sold to the Russian Government.

bottom is fitted for almost the entire length of the vessel. The frames are very closely spaced to take up the thrust of the pack ice. The shell plating is thicker than usual and the outer skin is doubled along the water line right fore and aft and to the bottom of the keel in the forebody, where the friction of ice tends to wear away the material faster than in ordinary marine service. The procedure is to drive the vessel forward until the forebody glides on to the floe sufficiently to cause the vessel's weight to crush the ice. In order that the weight may be increased at will, large tanks are built into the structure, and the pumps for filling and emptying these tanks deal with 250 tons an hour. The vessel is also equipped for breaking ice when going astern, and the counter is suitably strengthened to resist shocks. The rudder takes the form of the vessel, so that the vessel's movements are in no way impeded by ice floes. The propelling machinery consists of engines of the triple expansion three crank type with cylinders 27½, 43 and 70 ins. diam. by 39 ins. stroke, supplied with steam at 180 lbs. by four boilers of the cylindrical type 15 ft. diam., two of which are double ended and 21 ft. long, and two single ended 11 ft. long, with suspension furnaces and equipped with forced draught. All the machinery, and the propeller blades are of considerably greater strength than is

### Shipping of War Office Supplies, Etc., From Canada.

When on the declaration of war the Dominion Government was asked by the Imperial Government to supervise the purchase and transport of commissariat supplies which Canada could provide for the expeditionary force in Europe, the Hon. R. Rogers, Minister of Public Works, was selected to take charge of the work. Among others, he consulted Sir Thos. Shaughnessy, who placed at his disposal, without cost to the Government, the services of A. H. Harris, Special Traffic Representative of the C. P. R., together with such of the company's staff as Mr. Harris might select, this staff eventually numbering nearly 20 picked men, and as a result a large tonnage has been moved to the seaboard and thence to French ports of call.

The value of expert handling was demonstrated by the prompt chartering of vessels on a minimum charter rate, enabling the administration to maintain an average freight on oats during the past three months of 25 cts. per hundred lbs., and \$7.50 a gross ton on hay. Although, owing to the scarcity of tonnage, freight rates have risen rapidly since September, five vessels cleared from Montreal for a French port the latter part of November, the charter parties averaging



28c. per 100 lbs. on oats and \$8 on hay, a saving of close on 50 per cent. on current commercial rates. The C. P. R. made no charge for use of its docks by the chartered vessels and has warehoused everything free—being helped in this by the Allan Line, which also placed portions of its sheds at the Government's disposal. Over 600,000 sacks have been stored in and passed through C. P. R. sheds, and in addition, vast quantities of sacked oats were piled in the upper sections of the C. P. R. dock warehouses and subsequently loaded into chartered vessels consigned to French ports of call. The Ontario, Manitoba and Alberta Governments received the same treatment in connection with the forwarding of their gifts.

The shipments handled by this Administration under Mr. Harris' supervision from Sept. 1 to Nov. 30, including flour, War Office supplies, and French army blankets, total 120,000 tons of freight, free of storage, dockage, or steamship demurrage charges. The rapidity with which supplies went forward was shown in a cable from England to "go slow," as they were arriving too fast to be properly handled. A record has been established which it will take a long time to beat, and those concerned have come in for well merited congratulation.

The season of St. Lawrence navigation being closed, War Office supplies are being forwarded during the winter via Maritime province ports under Mr. Harris' supervision.

### St. Lawrence and Chicago Steam Navigation Company's Annual Report.

Following is the 24th annual report issued over the signatures of W. D. Matthews, President, and A. A. Wright, Managing Director:—

"The season of 1914 was one of the most unprofitable to vessel interests in the history of the Great Lakes. The disorganization of business brought about by the greatest war in the world's history and consequent uncertainties as to its effect, along with local causes, cutrailed the movement of heavy freight like coal, ore and lumber to such an extent that so many vessels were thrown into the grain carrying trade that during a great part of the season rates were forced below the cost of transportation. We look forward, however, to a gradual improvement in lake business during 1915, and, with an average crop next fall in Canada and the United States, earnings should be materially increased.

"Our new steamer, the J. H. G. Hagarty, was delivered to us in Aug., 1914, and is fully up to expectations in every way and should increase the earnings very materially. We are pleased to state that the company's steamers had no accidents during the season worth mentioning, and the balance at credit of our insurance fund has been increased \$9,000 after taking care of the expenditure of a considerable sum, strengthening the deck houses and hatches on our old steamers, and we feel that our fleet is now among the best and most seaworthy on the lakes.

"The directors from the earnings of the season have paid a dividend of 3%, amounting to \$28,992, and carried forward the balance, \$9,018.98, to credit of profit and loss, which added to the previous balance, makes a total of \$231,169.55 at credit of that account."

#### ASSETS.

Five steamers: Iroquois, W. D. Matthews, G. R. Crowe, E. B. Osler, and J. H. G. Hagarty ..... \$1,310,000 00  
Cash in bank and office ..... 8,299 25

\$1,318,299 25

#### LIABILITIES.

Capital stock, fully paid .....\$ 966,400 60  
Accounts and bills payable ..... 50,345 06  
Insurance fund ..... 70,314 64  
Balance of profit and loss carried forward ..... 231,169 55

\$1,318,229 25

#### PROFIT AND LOSS.

Balance forward Jan. 2, 1914 .....\$222,150 57  
Steamships earnings .....\$51,639 00  
Interest ..... 4,140 55

58,779 55

\$280,930 12  
Cost of management .....\$ 20,768 57  
Dividend 3%, payable Jan. 2, 1915..... 28,992 00  
Balance carried forward ..... 231,169 55

\$280,930 12

The directors, who were re-elected for the current year, are:—President, W. D. Matthews; Vice President and Secretary, J. H. G. Hagarty; Managing Director, A. A. Wright; other directors, Jas. Carruthers, Capt. S. Crangle, G. R. Crowe, C. S. Gzowski and Sir Edmund Osler.

### Stranding of the s.s. Navarra.

The formal investigation into the stranding of the s. s. Navarra, near Holmes Island, N. S., Dec. 30, 1914, was held at Yarmouth, N. S., Jan. 7 and 8, before Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. B. R. Hilton and J. W. Anderson, as nautical assessors. The Navarra is owned by Donald and Taylor, Glasgow, Scotland, and was under charter to the Admiralty for carrying supplies to the allied troops in France. She was built in 1909, and is a steel vessel of 4,387 tons gross and 3,847 tons register. She sailed from St. John, N. B., Dec. 29 for Havre, France, and struck in the early morning of Dec. 30.

After reviewing the evidence, the court condemned the methods followed by both the master and second mate, as well as the mate, in navigating the vessel. The judgment was as follows.—First of all the master sails from St. John with an old chart of 1890, upon which there are very few buoys marked; thereupon he sets a course without, as he acknowledged, making any allowance for the influence of tides, but plotted the course on his charts in a similar manner as if he were navigating a vessel in mid ocean. The court admits the evidence having regard to his being on deck off and on until 11 o'clock. The weather at the time did not require his constant presence on the bridge, but according to the log and the evidence submitted, up to 12 o'clock the weather was very hazy or thick on account of the heavy rain, and therefore it was the ordinary prudence required of a master, especially one who is a stranger to this locality and to the Bay of Fundy. The court cannot accept the courses nor the positions he has given, as possible. On the other hand, admitting such to be the case, the course laid down to pass Seal Island was absolutely too fine for safety, as in all probability this vessel would have brought up on Blonde Rock instead of stranding where she did, and would likely have entailed loss of life as well as loss of property. The court has examined the deviation book and finds that at intervals observations were made to ascertain the error of the compass, but did not find that any observation had been taken from the time the vessel left Jamaica until she got to Halifax and back to St. John. On account of the weather and the overcast sky the day she left St. John it was impossible to obtain an observation, but on the whole it would appear that the compass was very nearly correct, with very little error on most courses, the greatest error being 6 degrees, which was not on the course that was being steered at the time of the stranding. As for the

second officer who was on the bridge from 8 to 12, in view of the conditions of the weather, the court is of opinion that from 11 to 12, there was a total disregard of the rules of the road, also of ordinary prudence which is demanded in navigating a vessel in this locality. The fact of seeing a light on his port bow, which he took as Great Yarmouth light, and not ascertaining the position of his vessel by looking at the chart and taking soundings, and wondering if it was possible in view of the distance intervening and the time elapsing between leaving Lurcher light, as he supposed, for his vessel to be there, and to have hauled his vessel out until the exact position could be found. If ordinary precautions had been taken there is not the least doubt that the vessel would be safely out to sea at the present time. Taking into consideration the direction from the Lurcher lightship to the place where the vessel stranded, with her speed and the time which elapsed, it is an impossibility for the vessel to have fetched into that place, that is, following the courses and positions given by the master and the second mate. With regard to the first officer, who came on deck at 12 o'clock, and who was on duty when the vessel stranded, if, as he stated, objects could be seen some two miles distant, a poor lookout must have been kept by himself and the man who was performing that duty, for them not to have observed a lull, or something which would have caused some uneasiness in their minds as to the location of the vessel. There was also a lack of judgment and indifference shown when he came on deck and accepted the second officer's course as leading to Seal Island, when had he plotted the course down by the bearing which had already been taken, he would have found that the course would have brought them on the Blonde Rocks, and in view of the condition of the weather, he likewise should have diminished the speed of the vessel, and observed the rule of the road with regard to fog signals. Therefore the court cannot come to any other conclusion than that there has been shown on the part of the master, first and second officers, a great amount of negligence in navigating the vessel, or it may explain their conduct as culpable errors of judgment, and it agrees that in view of the trust that had been placed in these men on this special occasion, when the vessel was loaded with provisions and material much needed by the allied armies in France, it was their duty as Britishers, if loyal, to take exceptional precautions, more than ordinary precautions, to bring this property safely to its destination. This is a case where the court will be justified in using great severity in its finding, but in view of the conflicting justice with mercy, and for the reasons enumerated, suspend the certificate, no. 026201, of the master, Robert Milliken, for 10 months from Jan. 8; the mate's certificate, no. 003,791, of the second officer, A. G. Alexander, for 6 months from Jan. 8, and the master's certificate, no. 025,230, of the chief officer, W. S. Miller, for 3 months from Jan. 8, without the option, in any case, of lower certificates being granted.

An order in council has been passed at Ottawa approving regulations for the prevention of the giving out of information calculated directly or indirectly to be useful to the enemy, covering the movements and disposition of vessels and war supplies, the photographing or sketching of any docks or harbors, or other marine facilities, including buoys, beacons, etc., the use of telegraph lines, telephones and wireless telegraph installations, damages to railway bridges and other transportation facilities.



## Changes in Bills of Lading Re Grain Overages and Shortages.

At a meeting in Detroit, Mich., on Jan. 6, Great Lakes vessel owners brought to a successful issue the fight they have been waging with the grain shippers of Canada and the United States for several years in the effort to secure relief from liability for shortage in the outturn of cargo. The bill of lading has heretofore thrown upon the vessels the full responsibility. The vessel owner got the benefit of any overrun in the outturn of his cargo, but, on the other hand, the actual cash value of any shortage was deducted from his earned freight. This "cut throat" clause in the bill of lading, as it was called, left the vessel owner ignorant of whether any particular cargo would show a loss or a profit.

In Sept., 1914, the vessel owners of both countries met at Buffalo, and agreed to refuse to carry in 1915 except upon new conditions which would throw the gambling chance upon the shipper, whose agent, the elevator weighs the grain. A conference with shippers in Nov., 1914, was adjourned until Jan. 6, at Detroit, and the firm fight of the vessel owner for the basic principle that the shipper, in this case, must take the risks, resulted in a fair compromise shown by a new clause to be inserted in the bill of lading.

The committees of the three associations of carriers, viz., The Dominion Marine Association, The Lake Carriers' Association and The Association of Lake Lines of Buffalo met in Detroit, Jan. 5, to prepare for the conference on the following day and simply decided to adhere to the position previously taken and to insist that vessel owners would no longer carry the risk of discrepancy in the loading and outturn weights. They appointed Francis King, of Kingston, the Dominion Marine Association's Counsel, to state their case to the conference on the 6th. The representatives of the shippers also held a preliminary meeting on the 5th to arrange their programme. The parties came together on the 6th and at this conference all the leading grain exchanges and boards of trade at shipping points in both countries interested in any way in the lake grain trade were represented, prominent among these being Winnipeg, Montreal, Toronto, Chicago, Duluth, Minneapolis, Buffalo, New York, Baltimore and other inland and seaboard ports. Individual shippers and elevator owners also appeared. The vessel owners were represented on the Canadian side by L. L. Henderson, President Dominion Marine Association, and A. E. Mathews, A. A. Wright, G. E. Fair and H. W. Cowan, of Toronto, and F. King, of Kingston. The Lake Carriers' Association was represented by its President, W. Livingstone, its General Counsel, H. D. Goulder, the chairman of its committee on the bill of lading, A. W. Thomson, and W. H. McGean, H. K. Oakes and A. E. R. Schneider. The Association of Lake Lines was represented by C. M. Heald, W. H. Smith, of Montreal, and J. Rogers, of Buffalo.

An exhaustive discussion took up most of the day and a happy conclusion was ultimately reached by the appointment of a small joint committee of shippers and carriers, who retired, and in a short time reported a solution whereby the shipper would underake the risk in outturn in consideration of the carrier allowing a fixed deduction of one-quarter bushel per thousand as tare. A committee of shippers is working on a scheme to carry the shortages and overages by insurance, or otherwise, and they will consult with a committee of the carriers. The carriers in the meantime have agreed to make charters, or issue bills

of lading, only upon the conditions set out in the new clause given below, which is to form part of every contract and supersede the old "cut throat" or gambling shortage clause in the bill of lading.

The vessel owners proposed to insert the following clause in the bill of lading:—

"Provided that the vessel shall not be responsible for shortage exceeding  $\frac{1}{4}$  bush. per thousand; the vessel to deliver all grain on board collect freight upon actual turn-out, and make no claim for any over-run; and that where grain is carried at the same time for more than one shipper the shortage, if any, shall be ascertained separately with respect to the grain carried for each of such shippers; save that where two or more of such shipments are carried in the same compartment of the vessel, the shortage, if any, resulting upon unloading the last of such shipments, over and above the  $\frac{1}{4}$  bush. per thousand on the total amount shipped in that compartment, shall be borne pro rata by such shipments."

At the conference with the grain shippers the following compromise clause was agreed on:—

"The vessel shall make no claim for any over-run in the out-turn of cargo, and assumes no responsibility for shortage, but shall allow a fixed amount of  $\frac{1}{4}$  bush. per thousand as tare, to be deducted from the freight. All grain on board is to be delivered and freight is to be collected upon actual out-turn. Where two or more shipments are carried in the same compartment of the vessel, the shortage, if any, resulting upon unloading the last of these, shall be borne pro rata by the shippers."

Notwithstanding the understanding arrived at at the Detroit meeting between the vessel owners and the grain shippers, C. B. Watts, of Toronto, appeared before the Dominion Grain Convention in Toronto on Jan. 13 and objected to the new clause which is to be inserted in bills of lading. F. King, Counsel, Dominion Marine Association, spoke in support of the clause, and others taking part in the discussion were A. A. Wright, Managing Director, St. Lawrence and Chicago Steam Navigation Co., also counsel for the Canada Steamship Lines, Ltd., Canadian Pacific Ry., the terminal elevator owners and the Dominion Government elevators. It was decided by the Commission that the application would have to be made in writing, and the Commission would then consider the request, and if it thought it advisable to do so, would recommend the Government to amend the Grain Act.

The following clause in the bills of lading heretofore in use is to be eliminated:—"All deficiency in cargo to be paid by the carrier, and deducted from the freight and any excess in the cargo to be paid for to the carrier by the consignee."

### Disposal of Captured Foreign Vessels.—

It is announced that the British Admiralty is offering for sale, to British subjects only, a number of steamships captured at various times during the war from foreign belligerents. With the object of getting a number of these vessels into service, with a view to relieving the shipping situation, exceptional terms of payment are being arranged. If the purchasers desire, payment may be made 25% in cash and the balance in three annual payments, the first being due one year from the date of purchase, with interest at 4%. Any purchaser will be required to give a bond with sureties, to the effect that none of the vessels will be resold to enemies or foreigners for a certain period after the termination of the war, and declarations will also have to be given that no enemy or corporate body consisting principally of enemies or foreigners are in any way interested in the purchase. Prize sailing vessels may be purchased by neutral foreigners on guarantee that they will not be resold to enemies of Great Britain, but the steamships are to be sold only to British subjects.

## Great Lakes Charts Placed Under Dominion Control.

The Department of Naval Service at Ottawa has received from the British Admiralty all the copper plates used for publishing the Admiralty edition of the charts of the Great Lakes, with an intimation that the Lords Commissioners think that the Canadian Hydrographic Office is in a better position than the British one to look after keeping the charts up to date. Owing to the fact that all these charts were engraved in England there has always been considerable difficulty and delay in keeping them properly corrected, but in future this will be more closely attended to in this country. About 50 copper plates valued at \$20,000 have been received and it is hoped that most of these will be reprinted in the early summer.

The first surveys on the Great Lakes, with any pretence to accuracy, were made by Admirals Bayfield and Owen about 1820, and until 1883 these were the only charts in existence of the Canadian shores. They delineated the shore line and islands with remarkable accuracy considering the times, but shoals and soundings were conspicuous by their absence. In 1883, as a result of the loss of the steamboat Asia, S. J. Dawson, then M. P. for Algoma, prevailed upon the Government to undertake a proper hydrographic survey of the Great Lakes and this has been continued ever since, with the result that Lakes Ontario, Erie, Huron and Georgian Bay have been completed, and work on Lake Superior is about half finished. Between 1883 and 1910 only one steamboat was employed in this work, the old Bayfield, which was succeeded by the new Bayfield, but in 1911 the Department placed an additional steamboat on Lake Ontario.

**Skagway Wharf Burned.**—The complete destruction by fire of the 1000-ft. wharf at Skagway, Alaska, was reported by wireless early in January. The loss is estimated at \$210,000, of which \$60,000 represents the value of the wharf; the warehouse and its contents accounting for the remainder. With the exception of the ore and bunker chutes all the structures on the wharf were gutted by the fire. The destruction of the wharf will cause great inconvenience to shipping, it is reported, as the wharf was used for handling all the freight transhipped at this port for the interior over the White Pass and Yukon Route. The wharf will be rebuilt, it is reported, but during its reconstruction shipping will be obliged to use an old wharf abandoned several years ago.

**C.P.R. Vessel Building.**—Press dispatches from Great Britain, which stated recently that the C.P.R. had acquired five additional steamships, all of which were on the stocks at various yards in the United Kingdom, were misleading. The impression conveyed was that the C.P.R. was about to add five more vessels to its fleet, than had previously been announced. The facts are that no additional vessels have been ordered. The s.s. Metagama, a sister vessel to the Mis-sanabie, will soon be in service; two Pacific Coast vessels, Princess Margaret and Princess Irene, just completed, have been requisitioned by the Admiralty, and two one-class cabin steamships to be named Melita and Medora are being built at Glasgow. All of these have been referred to previously in Canadian Railway and Marine World.

**M. Cussen, Assistant Comptroller, Canada Steamship Lines, Ltd., Montreal, writes:—**"I beg to enclose my renewal subscription to Canadian Railway and Marine World, and assure you that I always look forward to receiving each copy."



## Mainly About Marine People.

**A. A. Allan**, of the Allan Line Steamship Co., Montreal, has been appointed an honorary colonel.

**F. Gilchrist**, formerly of Port Colborne, Ont., has been appointed Manager of the New Ontario Dock Co. at Sault Ste. Marie, Ont, vice S. L. Penhorwood, resigned.

Miss Frances Hazen, second daughter of **Hon. J. D. Hazen**, Minister of Marine, was married at St. John, N.B., Jan. 1, to Major T. M. McAvity, 26th Battalion.

**G. W. C. Hensley**, of Pickford and Black, Ltd., Halifax, N. S., has been elected President of the Halifax Board of Trade, for this year.

**W. B. McAllister**, heretofore Passenger Agent, Allan Line Steamship Co., Boston, Mass., has been appointed Assistant Manager there, vice F. D. Lilley retired.

**F. D. Lilley**, Assistant Manager, Allan Line Steamship Co., Boston, Mass., has retired after 33 years service with the company. For the past 15 years he was located at Boston, prior to which he was at Montreal.

**E. J. Guthrie** has been appointed Superintendent in charge of the operation of the Central Vermont Transportation Co.'s steamers operating between New London, Conn., and New York, N.Y., with office at New London, Conn.

**John Fleetwood**, who retired recently from the position of Passenger Traffic Manager of the White Star-Dominion Line at Liverpool, Eng., was given a present by the local staff, Jan. 8, in recognition of his 40 years service.

**J. J. Phelan**, formerly Purchasing Agent, Canada Steamship Lines, Ltd., Montreal, has been appointed Assistant Mechanical Superintendent, Montreal, not Assistant to Mechanical Superintendent, as stated in our January issue.

**Albert Ballin**, Director General, Hamburg American Steamship Co., has, it is stated, at the request of Emperor William, taken over the management of Germany's entire railway system and the work of delivering food supplies to the German army.

**Capt. James Carney**, and **Alex. McDonald**, master and chief engineer, respectively, of the C. P. R. car ferry Ontario, on the Detroit River, have retired from active service, after having served the company since the Ontario was first placed in service 25 years ago.

**W. C. Donaldson**, one of the Managing Directors of the Donaldson Line, died in Great Britain, Dec. 30, aged 45. He was one of the sons of the founder of the line, and was well known in Canada, where he made frequent trips in connection with the company's business.

**Calvin Austin**, President, Eastern Steamship Corporation, Boston, Mass., has been appointed receiver of the corporation, with office at Boston. In addition to other coast-wise services, the company has operated one between Boston and St. John, N.B., for several years.

**Capt. C. Troop**, who retired recently from the position of Marine Superintendent, C. P. R., London, Eng., was presented with an address by the local marine staff. Prior to entering C. P. R. service he was with Elder Dempster Co., and the Beaver Line, the latter being acquired by the C. P. R.

**Sir William Price**, who was created a knight bachelor, Jan. 1, has been at various times, director, Quebec Ry., Light and Power Co., and Quebec Steamship Co., President Quebec Board of Trade, and a provisional director of the projected Trans-Canada Ry. He is Chairman of the Quebec Harbor Commission.

**Capt. V. R. O'Reilly**, commander of the C. P. R. s.s. Montreal, was presented by the Quebec Board of Trade, Jan. 5, with a silver salver in recognition of his services in saving the crew of the brig Evelyn under difficult circumstances in the North Atlantic on Nov. 30, 1913. At the time of the rescue he was in command of the C. P. R. s.s. Monmouth.

**Capt. H. St. George Lindsay**, Superintendent of Pilots, and **W. I. Gear**, Steamship Agent, Montreal, have been appointed honorary colonels; and **Thomas Robb**, Manager, Shipping Federation of Canada, and **P. V. G. Mitchell**, Assistant Manager, White Star-Dominion Line, Montreal, have been appointed honorary majors, in connection with their work in the transportation of the Canadian contingent from Canada.

**Sir Thomas Sutherland**, Chairman, Peninsular and Oriental Steam Navigation Co.,



**J. F. Pierce**,  
General Passenger Agent, Canada Steamship  
Lines, Ltd.

has retired after occupying that position for 34 years. When he took hold of the company's affairs, the concern was practically bankrupt, and it was stated recently that if the business was to be wound up now the shareholders would receive a cash payment of at least three times the par value of their stock. He is one of the directors of the Suez Canal Co. He celebrated his 80th birthday recently.

The White Star-Dominion Line, in announcing the death of **James Thom**, reference to which was made in our last issue, makes the following comments:—"Mr. Thom has long been a highly esteemed and honored representative of the company in the conduct of its Canadian business, and his loss will be greatly lamented by all who knew him. It is fitting at this time that we record our appreciation of his long and faithful services, during which the company's interests under his charge have shown remarkable development and progress, and we are sure that all who knew him share the respect and esteem in which

we held him, and our sense of the loss we have all sustained."

**G. J. Desbarats**, who was created a Companion of the Order of St. Michael and St. George, Jan. 1, was born at Quebec, Jan. 27, 1861. He entered the civil service in 1879, as an engineer of canal construction and other public works. For several years he acted as assistant to the Chief Engineer of Canals, and from 1892 to 1896 was Inspector of Railway Construction in British Columbia; 1896 to 1899, Engineer in Charge, Galops Canal construction; 1899 to 1901, on hydrographic survey on the St. Lawrence River, and in 1901 he was appointed to supervise the work of rebuilding and enlarging the Government shipbuilding yards at Sorel, Que., and continued to act as Agent for the Marine Department, until his appointment as acting Deputy Minister of Marine, in 1908, being confirmed in that position in 1909, and appointed Deputy Minister of Naval Service in 1910. He has been a member of the Canadian Society of Civil Engineers since 1907, and was a councillor in 1907, and Vice President in 1909.

**C. P. R. taxation in Owen Sound.**—The Owen Sound Town Council is asking the Ontario Legislature to declare that the average value per acre of the land adjoining the C. P. R. tracks in the town shall be deemed to be the value per acre of the company's right of way, and that the company's docks and wharves shall be assessed for taxation. It is asked that an act shall be passed and made retroactive to Jan. 1, 1915.

**Empress of Ireland Fund.**—The fund which was opened for the relief of those dependent on the victims of the sinking of the C. P. R. s.s. Empress of Ireland, last year, was closed in London, Eng., Dec. 31. The total received is approximately \$427,000, about \$62,000 of which was forwarded through the Montreal Board of Trade. In addition to the foregoing, about \$3,000 has been sent by the Quebec Board of Trade.

**Submarine Construction in Canada.**—A press dispatch from Montreal, Jan. 15, states that Canadian Vickers, Ltd., is building eight first class submarines at their plant at Maisonneuve, and that these will be ready for service by August. The rumors which have been current to the effect that the plant is controlled by U. S. interests, or that such interests are concerned in its management, have been unequivocally denied.

**Niagara Dredging, Ltd.**, has been incorporated under the Ontario Companies Act, with \$40,000 capital and office at St. Catharines, Ont., to carry on a general dredging business, and deal in contractors' and shipping supplies, etc. **J. S. Campbell**, **C. Bowman**, **H. M. Campbell**, **M. M. Harris** and **V. S. Moyer**, St. Catharines, are the provisional directors.

**The Southern Pacific Co.**, early in January, placed in operation, what is stated to be the largest railway ferry steamboat in the world. It is being run on the Caraquez Strait, between Port Costa and Benicia, Cal. It is named Contra Costa, and is 433 ft. long by 116 ft. wide over guards, and will accommodate 2 locomotives and 36 freight cars, or 24 passenger cars.

**The British Admiralty** has announced that for the purpose of national defence, it has been necessary to close certain channels in the approaches to the port of Liverpool, Eng., and that all incoming vessels from all foreign and colonial ports must take a licensed Mersey pilot.

**The C. E. Deakin Co., Ltd.**, contractors, Montreal, have gone into liquidation, a winding up order having been granted.



### Atlantic and Pacific Ocean Marine.

The Allan Line s. s. Alsatian is being utilized as the flag ship of Rear Admiral Dudley de Chair.

The Allan Line s. s. Lavoisier, formerly Ludgate Hill, built in 1881, is reported to have been sold.

The Allan Line has chartered the steamships Ocean Monarch, Scottish Monarch and Verdun for its transatlantic freight service.

The C.P.R. has placed, through the Montreal office of Marsh & McLennan, Inc., insurance on its Atlantic and Pacific steamships, amounting to about \$25,000,000.

The C.P.R. s. s. Montrose, under charter to the British Admiralty as a transport, was reported to have been driven ashore at Dover, Eng., during a storm at the end of December.

The Ulster Steamship Co., operating the Head Line between ports in Ireland and Canadian and U.S. ports, is reported to have a vessel under construction in Belfast, to be ready for service this year.

Since the outbreak of war, and the taking over of all the C. P. R. transpacific vessels by the Admiralty, Canadian mails for the Orient have been carried across the Pacific by Japanese steamships.

The Great Northern Steamship Co.'s s. s. Minnesota, which has not been in service since Sept., 1914, is announced to re-enter the Pacific service, Feb. 6, when she will sail for Hong Kong.

The C.P.R. s. s. Tyrolia, formerly Lake Erie, has been sold to the British Government. She was built in 1900, and is 7,535 tons gross, 4,846 tons register, and was acquired by the C.P.R. from the Beaver Line.

The s. s. Navarra, under charter to the British Government, with a cargo of war supplies, bound from St. John, N.B., to France, ran ashore on Holmes Ledges, Tusket Island, Bay of Fundy, Dec. 30, and was reported to be a total loss. The cargo has been saved.

The s. s. Camino, which left San Francisco, Dec. 5, for Rotterdam, with relief supplies for the Belgians, was reported, Jan. 18, to be broken down and in a helpless condition, about 180 miles southeast of Sable Island. Dominion and U. S. vessels were sent to her assistance, and she was taken in tow and arrived at Halifax, Jan. 26.

The U. S. Government presented the captain of the Red Star Line s. s. Kroonland, recently, with a gold watch and chain, and various members of the crew with gold, silver and bronze medals, according to service, in commemoration of their rescue of 89 persons from the s. s. Volturno when she was burned at sea, Oct. 10, 1913.

It is announced that there is every probability of the inauguration of a steamship service between Vancouver and Bristol, Eng., via the Panama Canal. The City of Bristol sent a deputation to Vancouver recently to investigate the possibilities of such a service, and it is stated that some arrangement is being made with a well established company to supply it.

The Donaldson Line s. s. Tritonia, which was reported recently to have struck a mine off the Irish coast, and which report was afterwards denied, is now stated to have been abandoned after striking a mine about 38 miles west of Inistrahull, Ireland, when bound from the Manchester Ship Canal to St. John's Nfld. She was insured for £25,000, and was built in 1893.

The Union Steamship Co. of New Zealand's new steamship, for service between

Australasia and Canada, is expected to be ready for launching at Glasgow, Scotland, shortly, and will probably make her maiden voyage in May. She is larger than any other vessels of the company's fleet, and, it is stated, will be given a Canadian name, as was the last of the company's vessels, namely, Niagara.

The steamship companies are booking Russian and Finnish passengers through to Petrograd and Helsingfors and Abo, via Gothenburg, Karun and Tornea, which service was suspended on the outbreak of war. Passengers must have in their possession the necessary passports to enable them to travel through England and Scandinavia, and they must have sufficient money to pay for their maintenance while awaiting connections at various points.

The Hamburg American Line s. s. Dacia was reported recently to have been sold to E. N. Breitung, Marquette, Mich. It is said that she will be used in shipping freight to German ports under the U.S. flag. In view of the regulations under which Great Britain and the Allies are working, which, in the main, do not recognize the transfer of the ownership of the enemies' vessels in a neutral port, it is possible that the vessel will be captured by the British should she carry on such operations. The whole question of shipping by neutral countries is at present under

serious consideration by the British Government, and no doubt will be satisfactorily dealt with.

The British Admiralty, which, on the outbreak of war, requisitioned the whole of the C.P.R. Pacific fleet, has released the s. s. Monteaagle. She was expected to arrive at Vancouver from Hong Kong during January, when she would be given a thorough overhaul and replaced in the transpacific service. No indication is given as to where she has been operating during her service under the Admiralty. The Empress of Asia and Empress of Russia are on scout duty and holding German shipping in harbor, the Empress of Japan and Monteaagle have been acting as transports for troops, and the Empress of India has been purchased for use as a hospital ship for India by the Maharajah Scindia of Gwalior.

### Maritime Provinces and Newfoundland.

The s. s. Seal left North Sydney, Jan. 19, with the winter mail for Magdalen Islands.

The s. s. Bear River, which operates between Digby, N.S., and St. John, N.B., broke her main shaft while in the Bear River, Jan. 2. Repairs were made and the service resumed a week later.

It is reported that the C.P.R. s. s. St

### Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during 1914.

ARTICLES		CANADIAN CANAL	U. S. CANAL	TOTAL
Copper.....	Eastbound	Short tons 2,887	88,877	91,764
Grain.....	"	Bushels 32,293,593	36,044,479	68,338,072
Building stone.....	"	Short tons		
Flour.....	"	Barrels 2,203,392	7,511,031	9,714,423
Iron ore.....	"	Short tons 20,893,142	10,516,927	31,410,069
Pig iron.....	"	" 4,200	14,179	18,379
Lumber.....	"	M. ft. b m 21,129	431,019	452,148
Silver ore.....	"	Short tons		
Wheat.....	"	Bushels 98,093,481	52,190,614	150,284,095
General merchandise.....	"	Short tons 72,701	173,483	246,184
Passengers.....	"	Number 13,177	15,613	28,790
Coal, hard.....	Westbound	Short tons 334,087	1,9 6,418	2,240,505
Coal, soft.....	"	" 2,006,457	10,240,259	12,246,716
Flour.....	"	Barrels 150	512	662
Grain.....	"	Bushels		
Manufactured iron.....	"	Short tons 58,786	162,518	221,304
Iron ore.....	"	" 3,996		3,696
Salt.....	"	Barrels 100,316	676,892	777,208
General merchandise.....	"	Short tons 377,473	693,647	1,071,120
Passengers.....	"	Number 16,832	14,179	31,011
Summary.				
Vessel passages.....	Number	6,078	12,639	18,717
Registered tonnage.....	Net	17,295,953	24,690,381	41,986,339
Freight—Eastbound.....	Short tons	24,803,622	14,667,041	39,470,663
—Westbound.....	"	2,794,845	13,104,426	15,899,271
Total freight.....	"	27,598,467	27,771,467	55,369,934

### COMPARATIVE STATEMENT FOR THE SEASONS 1913 AND 1914.

Items	Season 1913	Season 1914
Vessels : Steamers.....	Number 19,789	14,994
Sailing.....	" 1,992	1,682
Unregistered.....	" 2,014	2,041
Total.....	23,795	18,717
Lockages.....	" 16,867	13,501
Tonnage : Registered.....	Net 57,989,715	41,086,339
Freight.....	Short 79,718,344	55,369,934
Passengers.....	Numbers 77,194	59,801
Coal : Hard.....	Short tons 2,44,574	2,240,505
Soft.....	" 15,878,364	12,246,716
Flour.....	Barrels 10,212,667	9,715,085
Wheat.....	Bushels 204,821,507	150,284,095
Grain.....	" 112,230,369	68,338,072
Manufactured and pig iron.....	Short tons 402,912	239,683
Salt.....	Barrels 730,431	777,208
Copper.....	Short tons 85,378	91,764
Iron ore.....	" 48,109,353	31,413,765
Lumber.....	m. ft. bm. 599,586	452,148
Building stone.....	" 6,181	
General Merchandise.....	Short tons 1,770,860	1,317,304

The Canadian canal was opened April 20 and closed Dec. 14, 1914; season, 239 days  
The U.S. canal was opened April 20 and closed Dec. 14, 1914; season, 242 days.



George, which was taken over recently by the Government for patrol duty in the Bay of Fundy, has been laid up for the winter, and that the C.P.R. s.s. Montford is taking her place.

The Government wharf at Miscou harbor, Little Shippigan, N.B., has been completed. It is 860 x 20 ft., with a head block 30 x 40 ft., the L being on the east side. It extends out from the south end of Miscou Island.

Press reports from Newfoundland state that the Reid Newfoundland Co.'s s. s. Lintrose is to be sold for war purposes, and that the company's s. s. Kyle will replace her on the Port aux Basque and North Sydney route.

E. A. Labelle and F. Robinson, two of the Montreal Harbor Commissioners, inspected the harbor works at St. John, N.B., at the end of December, at the invitation of the Minister of Marine. The chairman of the commissioners, W. G. Ross, intended to be present, but was prevented through illness.

In referring to the car ferry service, which will be inaugurated shortly, between New Brunswick and Prince Edward Island, the President of the Charlottetown Board of Trade, stated recently that he believed that such service would before long, be supplemented by the operation of one or more improved aeroplanes.

A press dispatch from Halifax, states that the s. s. Wacousta, which arrived, Jan. 9 from Sydney, N. S., where she had been fitted out for icebreaking work for the Russian Government at Archangel, will be used locally for patrol work. It is stated that it was discovered that she was unable to carry sufficient fuel for the trip across the ocean, and the project was abandoned.

The ice breaking steam tug, J. T. Horne, which was sold some time ago to the Russian Government for use in the harbor at Archangel, and which made an unsuccessful attempt to cross the ocean, has had a number of necessary alterations completed at Sydney, N.S. A false deck has been built with heavy planking on a steel frame about 7 ft. high, running from the bow to abaft the deck house. She left Sydney, Jan. 7, for Halifax, where she is to provision and prepare for the trip.

The Kilkeel Co.'s s. s. Kilkeel, which went ashore early in January, on the Bald Rock shoal, near Canso, N. S., has become a total loss. She was chartered by the Inverness Ry. and Coal Co., which, with the vessel owning company, is closely allied with the Canadian Northern Ry. The Kilkeel was built at Paisley, Scotland, in 1895, and was screw driven by engine of 39 n.h.p. Her dimensions were,—length 135 ft., breadth 21 ft., depth 9.4 ft.; tonnage, 252 gross, 56 register.

### Province of Quebec Marine.

The Quebec Harbor Commissioners are asking the Government for a loan of \$1,500,000 in order to complete certain harbor works. At an interview in Ottawa, Jan. 15, the Minister of Marine promised that the application would receive the Government's attention.

The ship channel across the Horseback bar in the St. Lawrence, between Quebec and Montreal, has been changed slightly in direction, and a new channel 450 ft. wide by 30 ft. deep at extreme low water has been completed. The change will necessitate the abandonment of the Cap Charles range lights, and the establishment of a new range in the alignment of the Calvaire above Cap Charles. The new lights will be exhibited

on the reopening of navigation. The Cap Charles channel has also been widened and deepened, to the same dimensions as the foregoing channel, with the exception of a length of 1,250 ft. by the buoy 77Q, where the old depth of 27½ ft. at ordinary low water exists. This will be completed to 30 ft. during the year.

### Ontario and the Great Lakes.

The Northern Navigation Co.'s s. s. City of Midland suffered considerable damage to the interior, by a fire which broke out in the passenger saloon, while she was at her winter berth at Collingwood, Dec. 30.

A Collingwood press dispatch states that the Playfair interests have placed a contract with Pratt, Haney and Marfariane for the construction of a large cement coal dock, which is to be equipped with the most modern coal handling machinery, at Midland.

The United States Lake Survey reports the levels of the Great Lakes in feet above tidewater for December, as follows,—Superior 602.08; Michigan and Huron 579.62; Erie 571.31; Ontario 244.83. Compared with the average December levels for the past ten years Superior was 0.23 ft. below; Michigan and Huron 0.61 ft. below; Erie 0.45 ft. below, and Ontario 0.77 ft. below. It was anticipated that during January, Superior would be 0.3 ft. lower, Michigan and Huron 0.2 ft. lower, that Erie would remain stationary, and that Ontario would be 0.1 ft. higher.

The grounds in the vicinity of the Brockton Point light station are being improved for park purposes, a concrete retaining wall and a boulevard are being built and a new lighthouse is under construction. The lighthouse is a square tower with sloping sides and an octagonal lantern. The structure is 42 ft. from the base of the tower to the top of the lantern ventilator, with the light 40 ft. above high water mark. As soon as the lighthouse is completed the illuminating apparatus will be removed from the present wooden structure and installed in the new tower.

James Carruthers, President; J. W. Norcross, Managing Director, and C. A. Barnard, K. C., Solicitor, Canada Steamship Lines, Ltd., returned to Montreal, early in January, after a business visit to England. It is said that while they were there the company's operating results for the past season were discussed with the English committee, who are reported to have expressed their satisfaction, considering the state of business during the latter part of the year. Press reports state that the company has received \$1,250,000 for additional working capital, from the English committee.

### British Columbia and Pacific Coast Marine.

The C.P.R. s.s. Princess Charlotte has been withdrawn from service for the winter. She is to be thoroughly overhauled and re-

fitted in readiness for service on the Alaska route in the summer.

The C. P. R. has installed an elevating apparatus on its wharves at Vancouver, to enable cargoes to be handled with ease at any stage of the tide.

The Imperial Oil Co.'s oil tank steamer Azov is being repaired at North Vancouver, after suffering considerable bottom damage by running on reefs off the coast of Chili about three months ago.

The Department of Marine, which issued special regulations recently for the navigation of Barkley Sound, has announced that these have been cancelled and that navigation in all parts of the sound is again open to all vessels.

C. Gardiner Johnson, Secretary to the Vancouver Pilotage Authority, stated recently, after the annual meeting of the commissioners, that they were aiming at a reduction of the compulsory pilotage charges for Vancouver, Howe Sound and Powell River. Suggestions had been forwarded from time to time to the Marine Department for consideration, and approval will have to be received from Ottawa before any announcement as to the extent of the reduction can be made.

The Border Line Transportation Co. has been organized at Seattle, Wash., to take over the steamboats Dispatch and Fulton, heretofore operated by the Border Line Transportation Co., and the steamships Alki and Northland, heretofore operated by the Northland Steamship Co. The vessels will be run to southeastern Alaska and British Columbia ports. A. F. Haines, Manager of Dodwell & Co., steamship agents, Seattle, is Manager, and H. C. Bradford, heretofore Manager and Secretary, Northland Steamship Co., is Traffic Manager.

**C. P. R. Steamship Ownership.**—The C. P. R. is applying to the Dominion Parliament for authority to lease or charter any of its ships, vessels or ferries to any incorporated company having for one of its objects the acquiring and operating of such vessels, and to hold and dispose of shares and securities of such company. Press dispatches state that such a move indicates the placing of the company's vessels under subsidiary companies, which question has been before the directors for several years. In the annual report for 1913-14, the earnings from steamships, etc., were not included in the general accounts, but figured under the head of special income account.

**Canada to Russia.** To accommodate Russians who want to return to their own country, the C.P.R. has arranged a rate of \$ 4.25 from St. John, N.B., to Petrograd. The route is by C.P.R. steamships to Liverpool, thence to a port in Sweden or Finland, and from there to Petrograd.

When one considers that the true progress of the entire civilized world is due almost entirely to the work of its engineers, the importance of providing the engineering profession with the highest possible education in both theoretical and practical lines cannot be exaggerated.—Waddell.

### Shipments of Grain From Fort William and Port Arthur.

The Lake Shippers' Clearance Association, which has its headquarters at Winnipeg, has furnished the following statistics of grain shipped through it from Aug. 1 to the close of navigation in December for each year from 1909 to 1914. The figures given are bushels.

	Wheat	Oats	Barley	Rye	Total
1909	11,775,967	8,226,964	5,663,450	1,877,665	26,544,046
1910	17,132,391	9,726,262	586,609	2,041,126	29,486,388
1911	17,633,639	11,548,982	1,103,835	809,266	29,995,722
1912	26,782,157	11,409,349	3,215,322	5,692,951	46,900,889
1913	42,796,796	25,895,157	7,100,439	9,397,966	85,090,358
1914	53,579,911	8,916,971	1,876,176	3,611,806	67,984,864



## Telegraph, Telephone and Cable Matters.

James Rainnie, who has been in Western Union Telegraph Co.'s service since 1866, the past 47 years having been spent at Sackville, N. B., has retired.

L. Longmoore, who was night manager, Montreal Telegraph Co., at Montreal, about 30 years ago, and who retired from active service some 20 years ago, died at St. Lambert, Que., Jan. 10, aged 78.

The British military authorities advised telegraph and cable companies recently that plain language messages for Great Britain and beyond, containing only one text word, would not be passed.

Nelson McRae, who died at Wyebridge, Ont., Jan. 21, aged 76, was local manager of the Montreal Telegraph Co. at Wyebridge in 1872, and later acted for the Great North Western Telegraph Co. till the company closed its office there.

George Haddon Stead, whose appointment as Superintendent, District 5, Great North Western Telegraph Co., Saskatoon, Sask., was announced in our last issue, was born at Eccles, Lancashire, Eng., Apr. 29, 1875, and commenced his telegraph service in 1889, since when he has been, to Apr., 1902, successively, messenger, delivery clerk, counter clerk, operator, bookkeeper and chief operator, G.N.W.T. Co., Winnipeg; Apr., 1902, to Oct., 1910, local manager, Canadian Northern Telegraph Co., Winnipeg; Oct., 1910, to Dec. 31, 1914, Superintendent, Western Lines, C.N. Telegraph Co., Winnipeg.

The Montreal Telegraph Co.'s report for 1914 shows total assets of \$2,313,556, and liabilities consisting of, capital \$2,000,000; excess in value of property \$151,823; dividend payable \$40,000; unclaimed dividends, etc., \$4,214; contingent fund \$117,517. The property is operated by the Great North Western Telegraph Co., under a lease for 97 years from July 1, 1881, and the operation, maintenance and dividends are guaranteed by the Western Union Telegraph Co. The officers for the current year are:—President, Wm. McMaster; Vice President, W. R. Miller; other directors, B. McLennan, R. MacD. Paterson and H. E. Rawlings, the last mentioned succeeding the late W. Wainwright.

## Transportation Conventions in 1915.

Jan. 19-21.—American Wood Preservers' Association, Chicago, Ill.  
 Jan. 19-19.—American Railway Engineering Association, Chicago, Ill.  
 April.—American Association of Demurrage Officers, Boston, Mass.  
 Apr. 28.—Association of American Railway Accounting Officers, Atlanta, Ga.  
 May.—Association of Railway Claim Agents, Houston, Tex.  
 May.—Railroad Master Tinnors', Copper-smiths' and Pipefitters' Association, Chicago, Ill.  
 May 4-7.—Air Brake Association, Chicago, Ill.  
 May 12.—American Association of General Passenger Agents, Los Angeles, Cal.  
 May 17-19.—Railway Storekeepers' Association, Chicago, Ill.  
 May 17-21.—International Railway Fuel Association, Chicago, Ill.  
 May 19.—American Railway Association, Atlantic City, N.J.  
 May 20-21.—American Association of Railroad Engineers and Firemen, San Francisco, Cal.  
 May 21-22.—American Association of Freight Agents, Richmond, Va.  
 May 22-23.—Master Boiler Makers' Association, Chicago, Ill.  
 May 23-24.—American Railway Master Mechanics' Association, Atlantic City, N.J.  
 May 24-25.—Master Car Builders' Association, Atlantic City, N.J.  
 June 15.—Train Despatchers' Association of America, Minneapolis, Minn.  
 June 16.—Freight Claim Association, Chicago, Ill.  
 June 16-17.—Association of Railway Telegraph Operators, Rochester, N.Y.  
 June.—American Railway Tool Foremen's Association.

July 14-17.—International Railway General Foremen's Association, Chicago, Ill.

Aug. 17.—International Railroad Master Blacksmiths' Association, Philadelphia, Pa.

Sept. 14-16.—Roadmasters' and Maintenance of Way Association.

Sept. 14-17.—Master Car and Locomotive Painters' Association of the United States and Canada, Detroit, Mich.

Sept. 21-24.—Railway Signal Association, Salt Lake City, Utah.

October.—American Association of Dining Car Superintendents.

Oct. 4-8.—American Electric Railway Association, San Francisco, Cal.

Oct. 19-21.—American Railway Bridge and Building Association.

## Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

Canadian Car Service Bureau—J. Reilly, Manager, 401 St. Nicholas Building, Montreal.

Canadian Electric Railway Association—Acton Burrows, 70 Bond Street, Toronto.

Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadian Express Building, Montreal.

Canadian Freight Association (Western lines)—W. E. Campbell, 502 Canada Building, Winnipeg.

Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July, and August.

Canadian Society of Civil Engineers—C. H. McLeod, 176 Mansfield St., Montreal.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Central Railway and Engineering Club of Canada—C. L. Worth, 409 Union Station, Toronto. Meetings at Toronto, 3rd Tuesday each month, except June, July, and August.

Dominion Marine Association—F. King, Counsel, Kingston, Ont.

Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.

Express Traffic Association of Canada—W. H. Burr, Chairman, Toronto.

Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.

International Water Lines Passenger Association—M. R. Nelson, New York.

Niagara Frontier Summer Rate Committee—James Morrison, Montreal.

Nova Scotia Society of Engineers—A. R. McCleave, Halifax, N.S.

Quebec Transportation Club—A. F. Dion, Quebec.

Ship Masters' Association of Canada—Capt. E. Wells, 45 St. John Street, Halifax, N.S.

Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.

Western Canada Railway Club—Louis Kon, Box 1707, Winnipeg. Meetings at Winnipeg, 2nd Monday each month, except June, July, and August.

## Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

F. H. Hopkins & Co., railway and contractors' supplies, etc., Montreal, have opened an office at 1206 Union Trust Building, Winnipeg, in charge of J. W. Purcell.

Algoma Steel Corporation Ltd., Sault Ste. Marie, Ont., has reopened its Montreal office at 211 McGill St., and has appointed G. A. Irwin Sales Manager.

Northern Crane Works, Ltd., Walkerville, Ont., has issued a booklet, "Cranes and Hoists," illustrating and giving particulars of a number of cranes of various types for railway and other service.

Canadian National Carbon Co., Ltd.—W. H. Arkenburg, formerly Publicity Manager, Union Switch & Signal Co., has been ap-

pointed to the National Carbon Co.'s Sales Department, with charge of railway and signal work in Canadian territory.

The National Steel Car Co., Ltd., Hamilton, Ont., has, we are officially advised, received orders for about \$250,000 of work from the British Government and for over \$1,000,000 worth from the French Government.

The National Boiler Washing Co., Ltd., Montreal, which installs boiler washing plants in locomotive houses and in industrial heating plants, is now conducting its western business from 1206 Union Trust Building, Winnipeg, the office being in charge of J. W. Purcell.

Canadian Car & Foundry Co. The President, Senator Curry, who has been in Europe, was expected back in Montreal at the end of January. W. W. Bulter, Vice President, arrived in London from Canada on Jan. 5. A press cablegram says that the company is opening an office in London.

Wall calendars for 1915 have been received from Bird-Archer Co., manufacturers of boiler chemicals, New York; W. W. Butler Co., Ltd., railway, marine and mining supplies, Montreal; Hart-Otis Car Co., Ltd., Montreal; and Pratt & Whitney of Canada, Ltd., small tool manufacturers, Dundas, Ont.

Ohio Brass Co., Mansfield, Ohio, has issued O-B Bulletin for November and December, as a car equipment number, containing, among other matter, articles on Tomlinson couplers, a high speed third rail interurban railway, O-B trolley retrievers, and overhead construction at Atlantic City and Shore Ry.'s car barns.

The Herbert Morris Crane & Hoist Co., Ltd., Toronto, has issued book 46, a loose leaf binder containing a collection of bulletins illustrating and describing, with dimensions and price lists, a selection of its standard manufactures, including chain blocks, trolleys, travelling blocks, hand cranes, overhead runways and various lifting and shifting devices and accessories. It has also issued in separate form, but suitable for insertion in the binder, Bulletin B11, respecting its belt-driven friction hoist.

**Buoy Lighting.**—The Department of Marine has decided to establish a uniform system of characteristic for gas lighted buoys and gas beacons, making buoy or beacon lights which are to be left on the starboard side in going up stream, occulting red lights, and port hand lights occulting white lights. That is, red buoys will carry red lights and black buoys white lights. For special positions, such as middle grounds, fairways, etc., special arrangements will be made. White lights will, however, be favored where possible. It is proposed to make the changes on the opening of navigation, or by May 1.

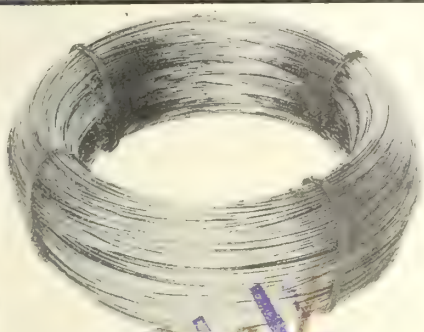
The Ideal Incinerator and Contracting Co. has been incorporated under the Ontario Companies Act, with power among other things to build railway sidings and switches, and to carry on the business of general contractors, and to manage tramways, docks, harbors, piers, wharves, canals, etc., but the company is not to operate or control any public utility or municipal franchise. The provisional directors are:—J. T. White, K. W. Wright, G. R. Sproat, F. M. McDowell, Miss M. W. Allan, Toronto.

The writing of first class specifications and contracts is an art that cannot be acquired except through experience; but nevertheless its acquisition can be hastened materially by a thorough drill in the technical school in the underlying principles of such writing as well as in the practice of their composition.—Waddell.



**Railway Lands Patented.**—Letters patent were granted in respect of Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, in Nov., 1914, as follows:—

	Acres.
Calgary & Edmonton Ry. ....	1,765.68
Canadian Northern Ry. ....	7,030.44
Canadian Pacific Ry. ....	35.56
Qu'Appelle, Long Lake & Saskatchewan Rd. and Steamboat Co. ....	4,636.00
Total .....	13,467.68



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your every requirement in the way of bare copper, copper clad, brass and bronze wire.

These products are rolled and drawn in our own mill and are of high quality and accurate gauge throughout.

*Write our nearest office for prices.*

**Standard Underground Cable Co.  
of Canada, Limited**  
Hamilton, Ont.

Winnipeg, Man. Montreal, Que. Seattle, Wash.  
Manufacturers of Electric Wires and Cables of all kinds, also Cable Accessories.

## CANADIAN NORTHERN RAILWAY COMPANY.

NOTICE is hereby given that the Canadian Northern Railway Company will apply to the Parliament of Canada, at its next session, for an Act extending the time wherein the company may construct—

(a) The lines of railway authorized by the Statutes of Canada for 1910, chapter 80, section 6, paragraph (i), shortly described as follows:—

- (i) Strathcona southerly to Calgary.
- (b) Also the lines specified in section 7, paragraphs (b), (d) and (f) of the same chapter, namely:—
  - (b) From the company's line near Swan River westerly to the Saskatchewan River.
  - (d) From Regina to Red Deer River, with a branch to Dalmeny.
  - (f) From the end of the fortieth mile of the Oak Point Branch via Oak Point to Grand Rapids on the Saskatchewan River.

(c) Also the line of railway authorized by the Statutes of Canada for 1913, chapter 94, section 3, paragraph (b), shortly described as follows:—

- (b) Regina northwesterly to Elbow.
- (d) Also the line of railway which the Northern Extension Railway (since amalgamated with the company) was authorized to build by the Statutes of Manitoba for 1904, chapter 77, shortly described as follows:—

Winnipeg through Springfield to eastern or southern boundary of Province.

(e) Also the unfinished portion south of Calgary of the line of railway which the Alberta Midland Railway Company (since amalgamated with the company) was authorized to build by the Statutes of Alberta for 1909, chapter 45, shortly described as follows:—

Strathcona via Calgary to the confluence of the Little Bow and Belly Rivers, thence to Lethbridge.

GERARD RUEL,  
Chief Solicitor.

Toronto, 23rd December, 1914.

## ALBERTA CENTRAL RAILWAY.

NOTICE.—The Alberta Central Railway Company will apply to the Parliament of Canada, at its next session, for an Act extending the time within which it may construct the following lines of railway: (a), from Rocky Mountain House to a point on the Grand Trunk Pacific in or near Yellowhead Pass; (b), three branch lines of 30 miles each, and two branch lines of 25 miles each into the Big Horn Range and along the Brazeau River, and for other purposes.

Dated at Montreal the 25th November, 1914.

H. C. OSWALD,  
Secretary.

Pringle, Thompson, Burgess & Cote,  
Ottawa agents.

## CANADIAN PACIFIC RAILWAY.

NOTICE.—The Canadian Pacific Railway Company will apply to the Parliament of Canada, at its next session, for an Act authorizing the company to lease or charter any of its ships, vessels or ferries to any incorporated company having for one of its objects the acquiring, owning or maintaining or operating of ships, vessels or other water craft, and to subscribe for, acquire, hold, guarantee, pledge and dispose of shares, bonds and other securities of such company, and for other purposes.

Dated at Montreal, this 8th day of January, A.D. 1915.

W. R. BAKER, Secretary.

Pringle, Thompson, Burgess & Cote,  
Ottawa agents.

## THE TORONTO, HAMILTON AND BUFFALO RAILWAY COMPANY.

NOTICE is hereby given that The Toronto, Hamilton and Buffalo Railway Company will apply to the Parliament of Canada, at its next session, for an Act confirming the amalgamation agreement dated 11th November, 1914, between The Toronto, Hamilton and Buffalo Railway Company and The Erie and Ontario Railway Company; and authorizing the amalgamated company to make, issue and sell bonds, debentures, or other securities to the same extent as The Erie and Ontario Railway Company is authorized to do, and to secure same by a first mortgage on the railway of The Erie and Ontario Railway Company and by a third mortgage on the railway of The Toronto, Hamilton and Buffalo Railway Company; and also authorizing the amalgamated company to make, issue and sell bonds, debentures, or other securities to the extent of fifteen million dollars to provide for the retirement of all the outstanding bonds and securities of the amalgamated company, and to provide for betterments, and to secure same by a consolidated first mortgage upon the undertaking and property of the amalgamated company; and for other purposes.

Dated at Hamilton this 2nd day of December, 1914.

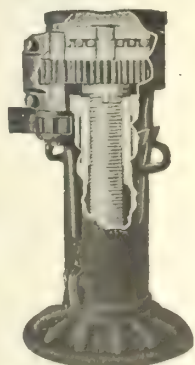
E. D. CAHILL,  
Solicitor for the applicants

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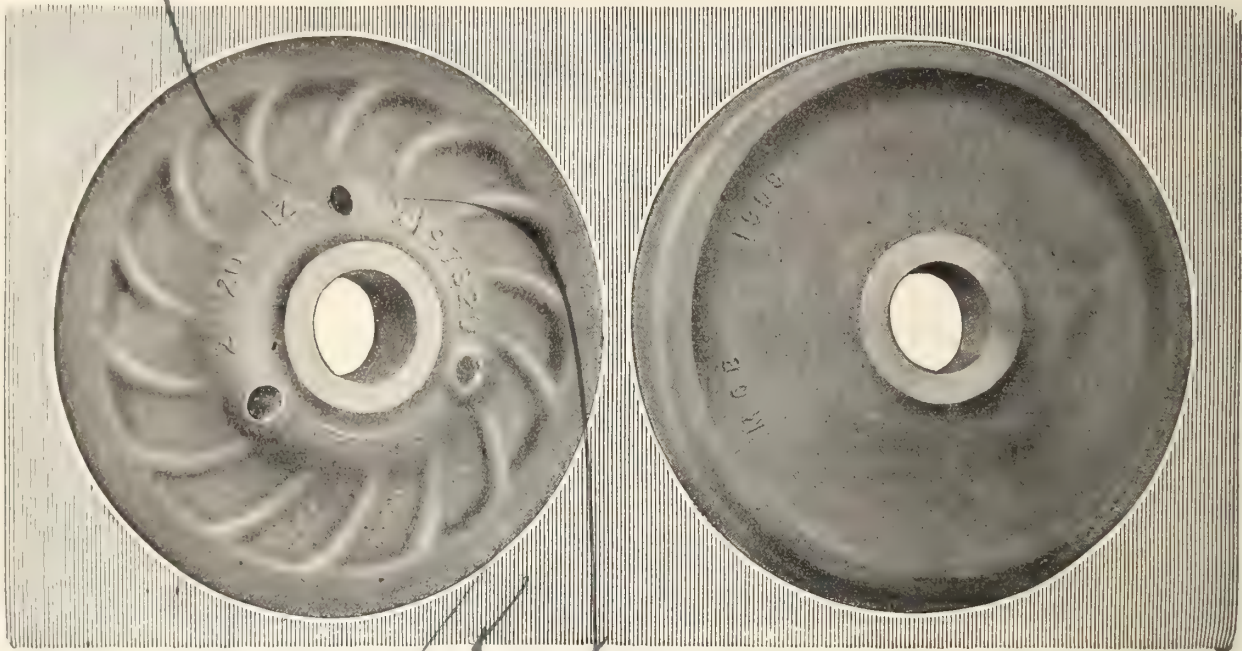
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SHERBROOKE, QUE.

Sole Agents for Brakeshoes for Canada outside of B.C., Messrs Taylor & Arnold, Limited, Montreal and Winnipeg. Sole Agents for B.C., The B.C. Equipment Co., Vancouver, B.C.



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M.C.B. STANDARD 725 LB. CHILLED IRON WHEEL FOR 100,000 LB. CAPACITY CARS.

Single service means a wheel applied and allowed to run its life without any repairs whatever, such as turning.

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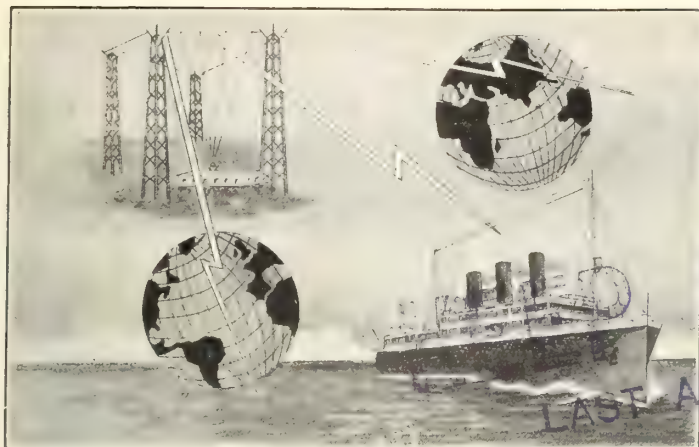
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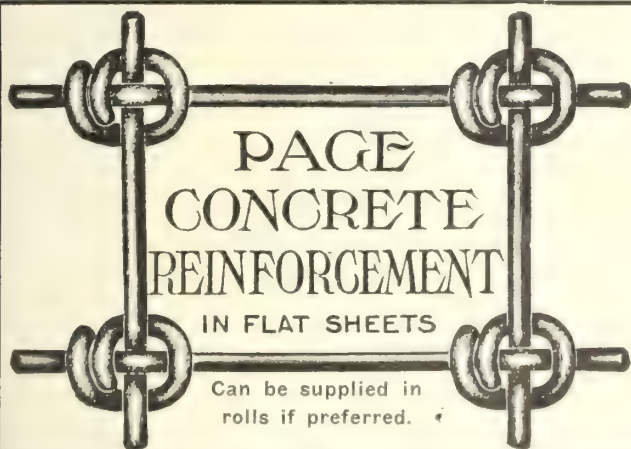
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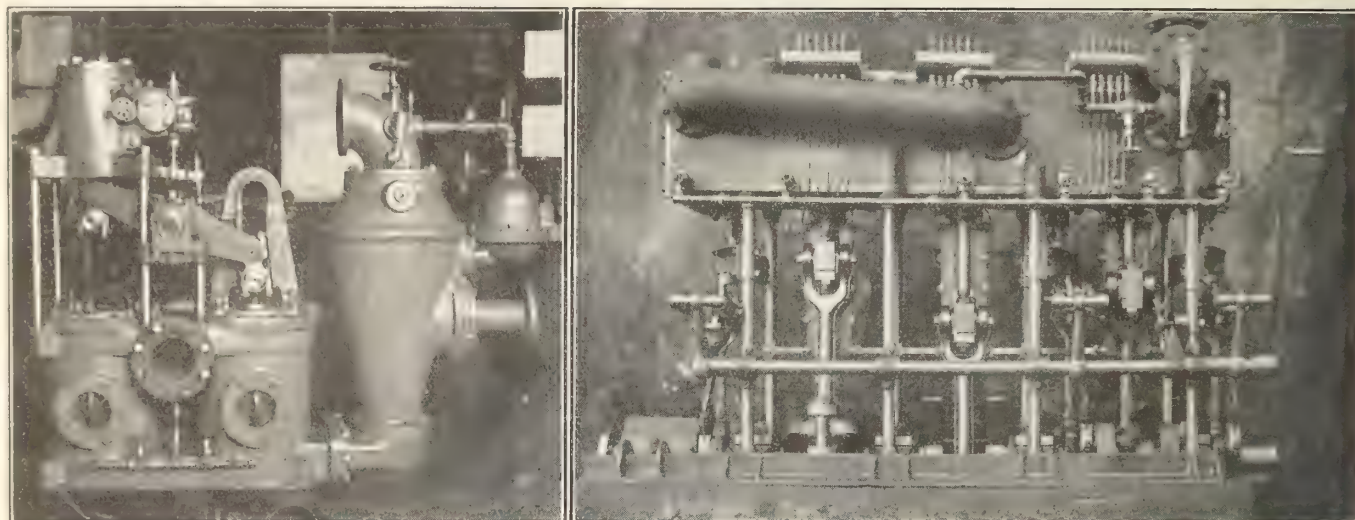
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Malleable Castings of Every Description.



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## For Prompt Sale



High-class marine engine and boiler suitable for fast steam yacht or shallow draft passenger boat. Triple expansion engine 9 inches and 13 1-2 inches and 20 inches by 11 inches stroke. Water tube boiler—1,220 square feet of heating surface: 300 pounds working pressure.

Also smaller outfit, consisting of triple expansion engine 4 1-2 inches and 7 inches and 11 inches by 8 inches stroke, water tube boiler, 250 pounds working pressure.

*For full particulars, address*

# Polson Iron Works, Limited

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This university has students among all classes of men in every civilized country on the globe. It can truly be called "The World's Greatest University"—it enrolls a hundred thousand students every year—more than all the technical schools combined.

Two hundred and seventy-two courses are taught by this university—thirty of them are designed especially for men employed on the railroads and in ocean and lake navigation.

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Full particulars will gladly be furnished upon request—either about individual courses for ambitious men who want to qualify for promotion or about the co-operative agreements for railroad officials who want to increase the efficiency of their employees.

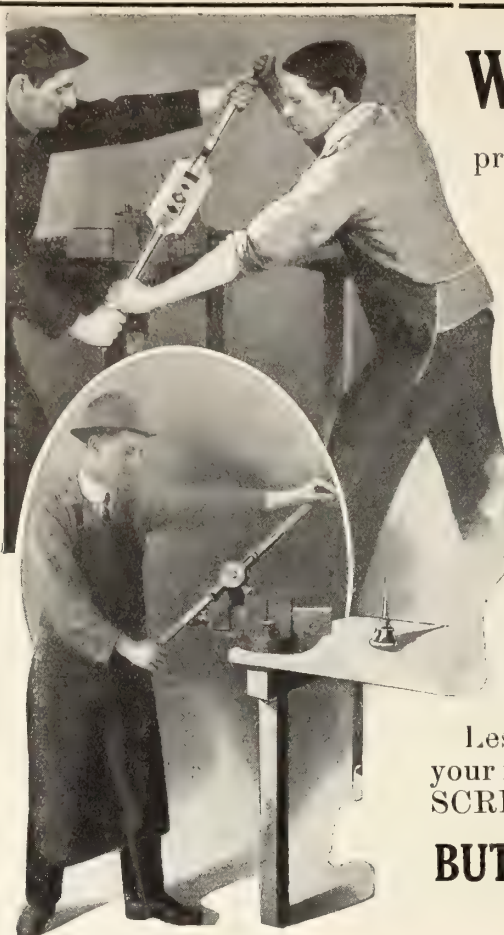
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Please explain, without obligation to me, how I can qualify for the position before which I mark X.

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R. R. Traveling Fireman	Electrical Engineer
R. R. Construction Eng.	Tel. and Tel. Engineer
Agency Accounting	Mechanical Engineer
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Name .....  
 St. and No. ....  
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prevails in your plant? Does it take two men to do one man's work.

Why don't you replace that old antiquated tool with a new up to date

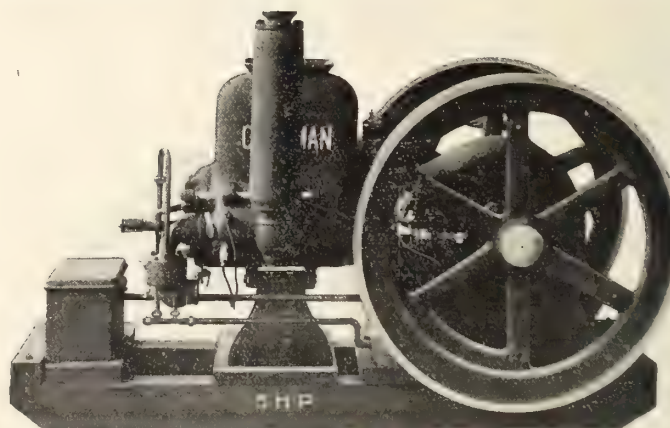
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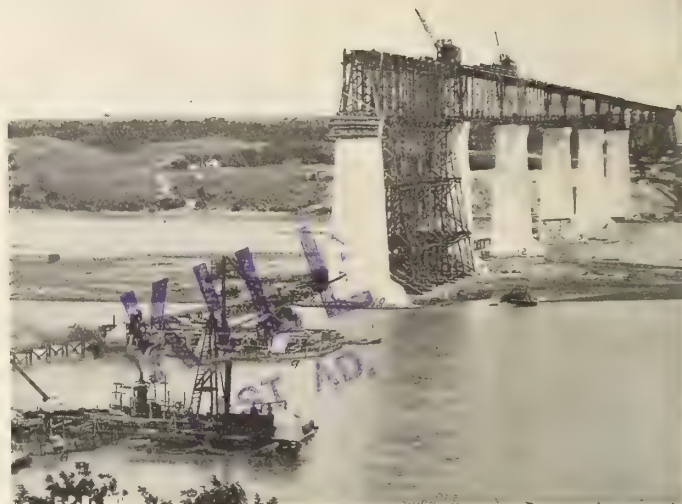
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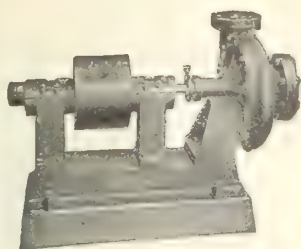
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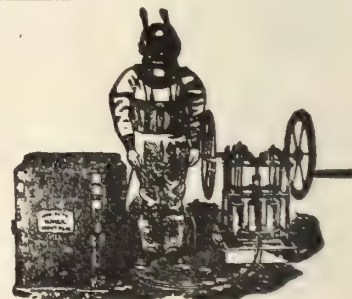
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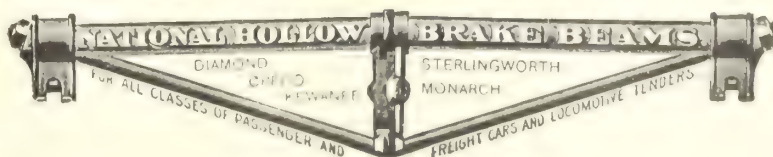
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CLEVELAND

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\$2.00 to \$5.00CANADIAN NORTHERN QUEBEC RAIL-  
WAY COMPANY.NOTICE is hereby given that the Cana-  
dian Northern Quebec Railway Company  
will apply to the Parliament of Canada, at  
its next session, for an Act extending the  
time wherein the company may construct  
the lines of railway authorized by the  
Statutes of Canada for 1913, chapter 93, sec-  
tion 2, shortly described as follows:—

- (i) Rawdon northerly to the National  
Transcontinental Railway, with a  
branch to Joliette.
- (ii) St Jerome to St. Eustache.

GERARD RUEL,

Chief Solicitor.

Toronto, 21st December, 1914.

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President.JAS. W. MOFFAT,  
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Norfolk House, Laurence Pountney Hill, London, E.C.  
808 McArthur Bldg., Winnipeg, Man.CANADIAN NORTHERN ONTARIO RAIL-  
WAY COMPANY.NOTICE is hereby given that the Cana-  
dian Northern Ontario Railway Company  
will apply to the Parliament of Canada, at  
its next session, for an Act extending the  
time wherein the company may construct:—(a) The lines of railway authorized by the  
Statutes of Canada for 1913, chapter 92,  
section 2, paragraph (a) items (i) to (iv),  
(vi), (ix) and (x), shortly described as fol-  
lows:—

- (i) Washago to Kincardine.
- (ii) Arnprior to Gananoque.
- (iii) Pembroke to Cobourg or Port  
Hope.
- (iv) Frenchman's Bay, northwesterly to  
Owen Sound.
- (v) Niagara River to Goderich.
- (ix) Hawkesbury to a point in the  
County of Leeds or Lanark.
- (x) Parry Sound to North Bay.

(b) Also the line specified in paragraph  
(b) of the same section and chapter,  
namely:—Berlin, through Guelph, Acton and  
Brampton to Toronto.(c) Also the lines of railway authorized  
by the Statutes of Canada for 1913, chapter  
92, section 2, paragraph (d), shortly de-  
scribed as follows:—

- (i) Berlin to St. Marys and Woodstock.
- (ii) Sarnia to Chatham.
- (iii) Orillia to Goderich, with a branch  
to Owen Sound.

GERARD RUEL,

Chief Solicitor.

Toronto, 21st December, 1914.

## GRAND TRUNK PACIFIC RAILWAY.

NOTICE is hereby given that the Grand  
Trunk Pacific Railway Company will apply  
to the Parliament of Canada, at its next ses-  
sion, for an Act confirming, ratifying and  
making effective for a period of ninety-nine  
years an agreement dated 24th April, 1912,  
between the Canadian Northern Railway  
Company and the Grand Trunk Pacific Rail-  
way Company providing for the establish-  
ment, use, control, management and opera-  
tion by the said companies of joint termin-  
als at Edmonton, Alberta, and for other pur-  
poses.Dated at Montreal this 9th day of Decem-  
ber, 1914.

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gary, Alta.; Edmonton, Alta.; Winnipeg,  
Man.; Victoria, B.C.THOS. C. IRVING,  
Gen. Man. Western Canada, Toronto.THE JAMES BAY AND EASTERN RAIL-  
WAY COMPANY.NOTICE is hereby given that the James  
Bay and Eastern Railway Company will  
apply to the Parliament of Canada, at its  
next session, for an Act extending the time  
wherein the company may construct the line  
of railway authorized by the Statutes of  
Canada for 1910, chapter 113, section 7,  
shortly described as follows:—From near Lake Abitibi, easterly and  
southeasterly, passing south of Lake St.  
John to the mouth of the Saguenay River.

GERARD RUEL,

Chief Solicitor.

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Write for our Catalog K, which shows how and where the Brownhoist Locomotive Crane is used.

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**CLEVELAND, OHIO**

MONTREAL OFFICE, 145 St. James Street



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THIS ISN'T A "CUSS WORD."

- ¶ It's only the well-known Canadian slogan used in the way many manufacturers use it, "**wrong way to.**"
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- ¶ They make it the **principal figure** in their sales pictures, instead of using it as a **background**.
- ¶ They are trying to sell on **Canadian Patriotism**, not on **Quality and Merit**.



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# Canadian Railway AND Marine World

ESTABLISHED 1898.

Number 205

TORONTO, CANADA, MARCH, 1915

Subscription Rates, Page 101

## UP AGAINST IT!

This is an 18 Pr. Shell after firing proof.

It was supposed to hit a sand-bank but—it hit a rock.

As a result it looks slightly "Up against it."

Purchasers of Machine Tools are often in the same shape:—

They buy on price for to-day's apparent needs and when to-morrow's demands have to be met they are —

UP AGAINST IT.

## BERTRAM MACHINE TOOLS

have a margin of QUALITY and STAYING  
POWER

over the needs of to-day to "stand up" under the increased demands of years to come.

Let us show you why.

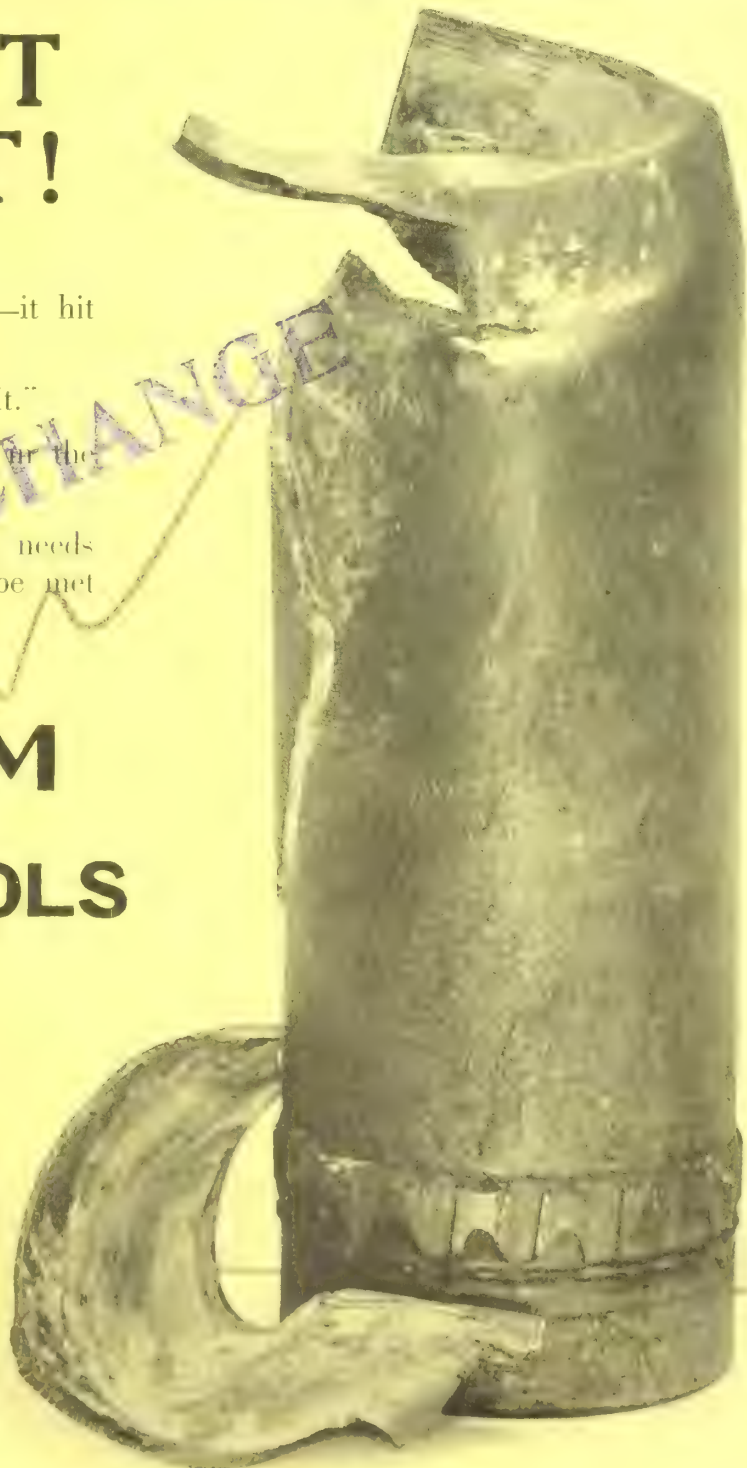
**THE JOHN BERTRAM &  
SONS COMPANY**  
LIMITED

DUNDAS, ONTARIO, CANADA

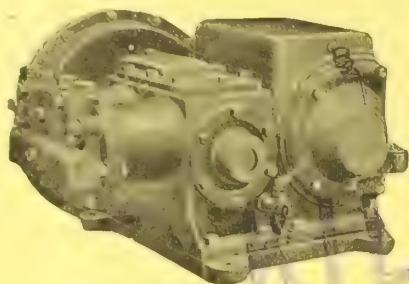
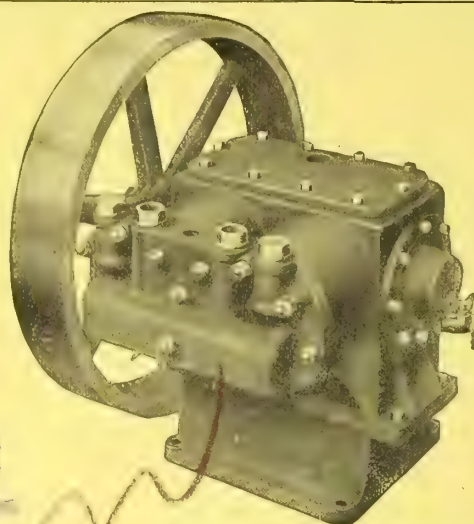
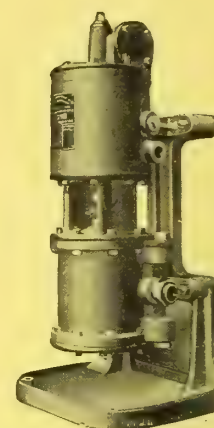
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*Motor-Driven**Belt-Driven**Steam-Driven*

## **Westinghouse Air Compressors**

Choose the one that suits your power source.—Any one of the three types represents in its class the greatest compactness and simplicity of operation, and has a negligible maintenance cost.

**Canadian Westinghouse Company, Limited, Hamilton, Ontario**

TORONTO MONTREAL OTTAWA HALIFAX FT. WILLIAM WINNIPEG CALGARY EDMONTON VANCOUVER  
 Traders Bank Bldg. 52 Victoria Square Ahearn & Soper, Ltd. Telephone Bldg. Telfer Bldg. 158 Portage Ave. E. Grain Exchange Bldg. Dominion Bldg. Bank of Ottawa Bldg.

# CANADIAN PACIFIC WINTER TOURS

To the Land of Sunshine and Summer Days  
**CALIFORNIA, FLORIDA, LOUISIANA, Etc.**

Limited trains leave Toronto daily, making direct connection at Detroit and Buffalo for the Southern States, and at Chicago for California, etc.

Those contemplating a trip of any nature should consult Canadian Pacific Ticket Agent, who will be pleased to quote rates, arrange reservations and attend to all details in connection with your trip ; or write

**M. G. MURPHY**

**District Passenger Agent**

**TORONTO**



# Why Dynamic Indication is the always-safe principle in G R S Electric Interlocking



The fundamental safety first principle of G R S Electric Interlocking Dynamic Indication remains as it was invented 13 years ago. This test of years is the most convincing evidence in the unfailing integrity of Dynamic Indication.

This indication is not secured from energy existent at the function prior to the movement of that function and dependent only on closing of a single break in the indication circuit, as is the case in A. C. and battery indication systems; but being a dynamic current generated by the momentum of the motor, it can be secured only after actual operation of the function. Since it is impossible to obtain an indication upon the lever controlling the function in any other way than by this generated current pro-

duced by the motor after the completed movement of the function, this system is **always safe**. Furthermore, dynamic indication is solely and only a G R S principle.

This **only always safe** principle of Dynamic Indication with several other features has brought this system into marked favor with the result that 80% of the power interlocking in use to day is G R S Electric.

This system is equally suited to the 8 and 24 lever plant as it is to the Grand Central Terminal which is the largest interlocking in the world.

Why not install the **only always safe** system, the G R S Electric Interlocking employing Dynamic Indication?

*"Safety First"*



**GENERAL RAILWAY SIGNAL COMPANY**  
**OF CANADA LIMITED**



Office and Works, Lachine, Quebec

Branch Office, Winnipeg, Manitoba



# Meeting One Financial Obstacle to Adequate Signal Protection

There is little doubt that there would be a tremendously greater amount of mileage protected by automatic block if first cost were the only difficulty to be encountered. The great difficulty, however, in the universal use of fixed automatic block signals is found in the continuous cost of maintenance.

The advantage in this respect of

## Simmen Automatic Block Cab Signals



is shown by the fact that none of the four roads which are operating the Simmen System have found it necessary to provide any special organization or additional labor for inspection purposes.

The reason for this is that the track and overhead installation of the Simmen System is so simple (involving no apparatus along the track except standard telephone overhead construction and simple signal rails) that the regular track and line maintenance labor is ample to care for these elements.

All operating electrical apparatus is either in the cab or in the dispatcher's office.

The cab apparatus is easily inspected when the car is in for regular inspection.

The apparatus in the dispatcher's office is readily inspected and cared for by the dispatcher, with the occasional assistance of a lineman.

This enormous comparative saving in maintenance costs is proved by the experience of the four roads on which the **Simmen System** is now, and has for some time been, standardized.

The importance of this fact in any signal installation is obvious.

## THE NORTHEY-SIMMEN SIGNAL CO., Ltd. TORONTO

Simmen Automatic Railway Signal Co., Buffalo



## To Parties Manufacturing, or Intending to Manufacture in Canada:

We are prepared to produce, upon a large scale, articles of metal and wood.

Our facilities are those necessary for the extensive and economical manufacture of the heaviest freight cars and the highest class of passenger cars. These facilities include plants for the manufacture of steel, malleable and grey iron castings—rolled steel and iron products—frogs, switches and track work for electric and steam railways—coil and elliptic springs—forgings—cabinet and other wood work—and all preparatory and finishing adjuncts.

The various plants are distributed from Amherst, N.S. to Fort William, Ont.

Correspondence invited.

**Please address Sales Department,  
P. O. Box 180,  
Montreal.**

**Canadian Car & Foundry Company, Limited  
Canadian Steel Foundries, Limited  
Pratt & Letchworth Company, Limited  
Rhodes, Curry Company, Limited**



# Galena-Signal Oil Company

Works

**Franklin, Pa., and Toronto, Ont.**

Canadian Sales Office—603 Shaughnessy Bldg., Montreal, Que.

Sole manufacturers of the celebrated GALENA COACH, ENGINE and CAR OILS, and SIBLEY'S PERFECTION VALVE and SIGNAL OILS.

GUARANTEE COST per thousand miles for from one to five years, when conditions warrant it.

Maintain EXPERT DEPARTMENT, which is an organization of skilled railway mechanics of wide and varied experience. Services of Experts furnished free of charge to patrons interested in the economical use of oils.

## STREET RAILWAY LUBRICATION A SPECIALTY

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USE

## Galena Railway Safety Oil

in Headlights, Marker and Classification Lamps, to secure Efficiency of Service, Maximum Candle Power, Clearness of Light.

## Galena Long Time Burner Oil

for use in Switch and Semaphore Lamps, and all lamps for long time burning, to avoid smoked and cracked chimneys and crusted wicks.

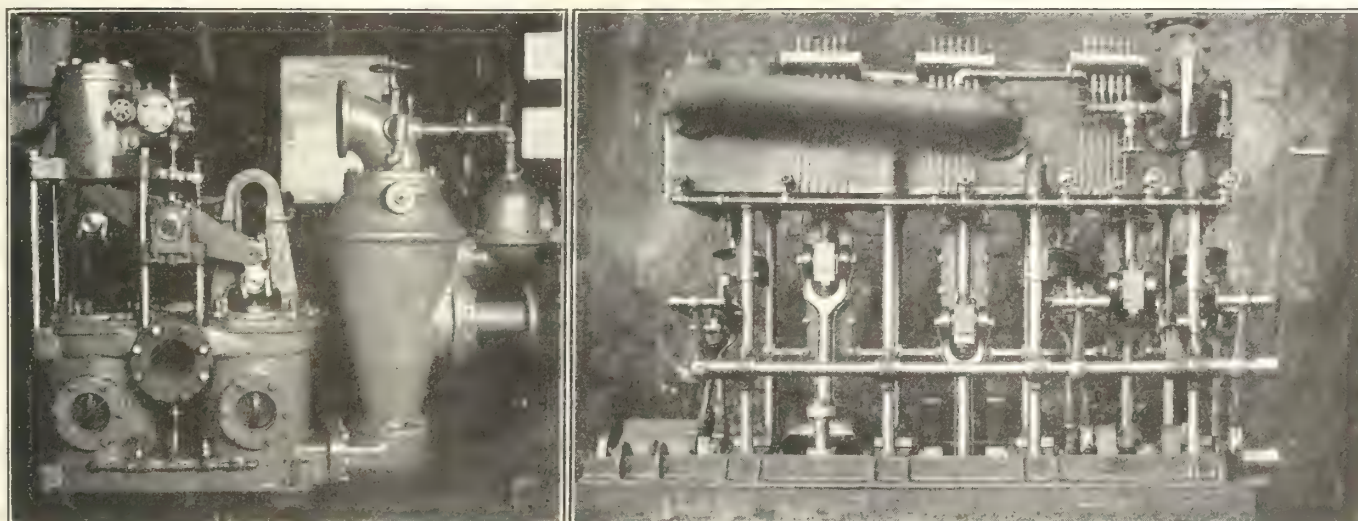
Tests and Correspondence Solicited.

**S. A. MEGEATH,**  
PRESIDENT.



# Slightly Used Marine Engines and Boilers at Greatly Reduced Prices

## For Prompt Sale



High-class marine engine and boiler suitable for fast steam yacht or shallow draft passenger boat. Triple expansion engine 9 inches and 13 1-2 inches and 20 inches by 11 inches stroke. Water tube boiler 1,220 square feet of heating surface: 300 pounds working pressure.

Also smaller outfit, consisting of triple expansion engine 4 1-2 inches and 7 inches and 11 inches by 8 inches stroke, water tube boiler, 250 pounds working pressure.

*For full particulars, address*

# Polson Iron Works, Limited

## Toronto





28 "Service" Branches Throughout Canada

CANADIAN CONSOLIDATED  
RUBBER CO., LIMITED

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*Buy Rubber Goods*

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*Made in Canada*

Our line-up is complete, our quality is unexcelled,  
and our prices are right. Let us show you  
what we can do.

*It is our desire to serve you.*



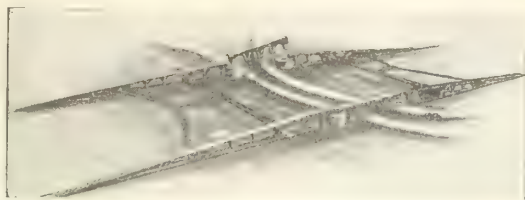
CANADIAN CONSOLIDATED  
RUBBER CO., LIMITED

MONTREAL, P. Q.

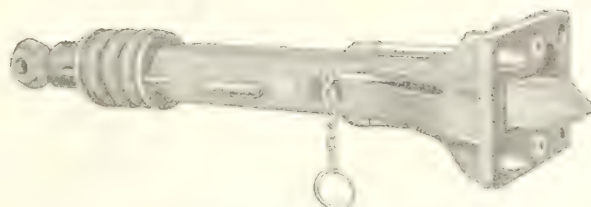
28 "Service" Branches Throughout Canada







Fire Hose Bridge



Tomlinson Automatic Couplers



Trolley Retriever

## O-B Car Equipment Materials

were designed by practical and experienced men.

Before designing, careful investigations were made of the requirements of the trade. Suggestions were obtained from many railway men.

Thorough tests in service were made on every device before it was offered for sale.

The result—a line of devices thoroughly in keeping with the O-B watchword

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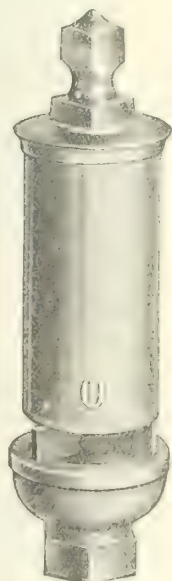
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## THE OHIO BRASS CO.

Mansfield, Ohio



Electric Signals



Chime Whistle



Lighting Regulator



Trolley Catcher



Whistle Valve



Trolley Base



Diaphragm Sander Valve



Trolley Wire Pick-Up



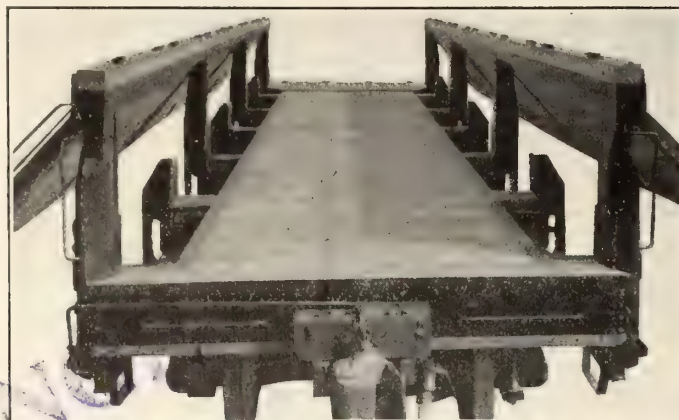
## SIDE BALLASTING WITH ONE SIDE CLOSED

### THE LATEST IN BALLAST CARS

33 $\frac{1}{3}$ % More Door  
Opening Area

Less Stakes to  
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No Clogging of the  
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Between the Plow  
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The Pockets At Each Side Allow the  
Material to Get Away Relieving the  
Car Side and Stakes of Strain.

Dumps Clean and  
Quicker in Any  
Material

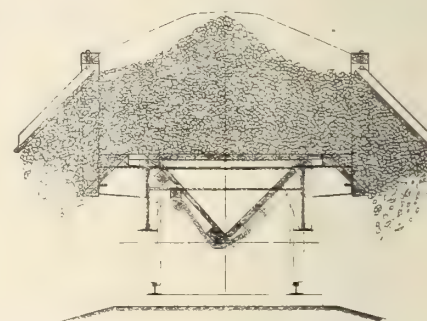
No More Breaking  
of Stakes or Cables

The Car That Will  
Give Maximum  
Service With  
Minimum Repairs

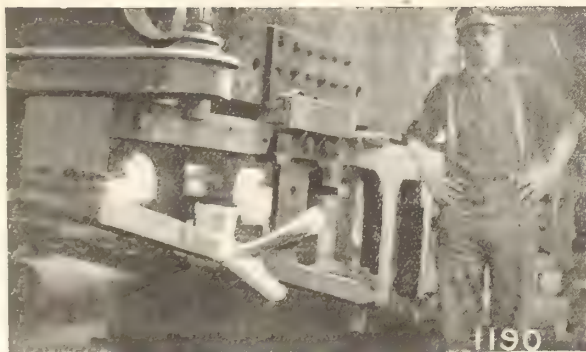
ACTUAL SERVICE HAS PROVEN ITS EFFICIENCY  
LET US SHOW YOU THIS CAR

DESIGNED, BUILT, AND PATENTED IN CANADA

THE HART-OTIS CAR CO. LIMITED MONTREAL



## Difficult Frame Welding Made Easy with Thermit



Finished Thermit Weld on Engine No. 802 of the  
Grand Trunk Pacific, Transcona, Man.



Frame Welded with Thermit by the Illinois Central,  
Centralia, Ill.

You can weld a frame quickly and economically with Thermit, whether it is broken in the splice, under the fire box, close up to the cylinder, or at any other point. It is not necessary to take the frame down, as all welds can be made with the frame in place.

No other process of welding is so quick and uniformly efficient and economical in operation as the Thermit Process.

The proof is in the fact that to-day 435 railroad shops in North America are using Thermit and returning their engines to service in from 10 to 24 hours.

We have just issued a new pamphlet of instructions for the use of Thermit in railroad shops, known as Pamphlet No. 2144. This should be in the hands of every railroad man, as it tells how and why the Thermit Process of welding will save thousands of dollars every year in repair costs. Write for it to-day.

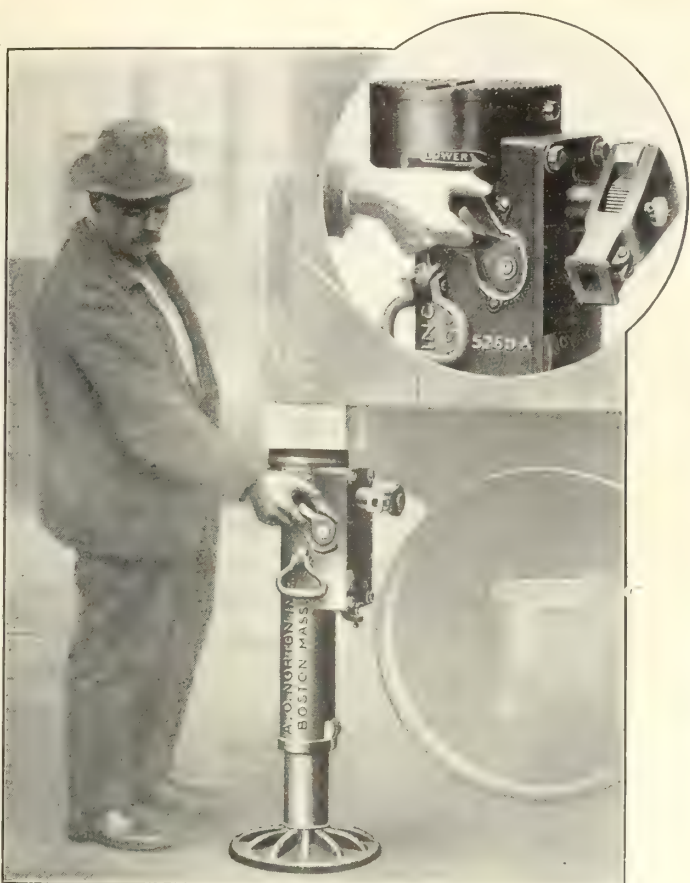
## GOLDSCHMIDT THERMIT COMPANY

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90 West Street, New York

WILLIAM C. CUNTZ, Gen. Mgr.

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*Lower the Load by "Pressing the Button"*

## THE NORTON SELF LOWERING JACK

is absolutely Safe and will do your work **Quicker** and **Easier** than you have ever done it before.

Send for Illustrated Catalogue No. 28

**A. O. NORTON, Limited**  
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Stock Carried by Canadian Agents: **MUSSENS LIMITED**  
Montreal Toronto Winnipeg Cobalt Calgary Vancouver



## Berry Brothers' Railway Varnishes

There is pride in ownership only when the thing owned looks new. No matter how valuable a service it may render, it is never satisfactory unless it has the right appearance. There is great self-satisfaction in owning things that look good, and we actually add to this value because appearance is an asset.

Service and appearance are both important factors in railway maintenance. Both service and appearance, in station and office interior finish, can be secured through the use of Berry Brothers' Varnishes.

### LIQUID GRANITE

The most durable varnish made. It is proof against the action of moisture and stands the maximum of rough usage.

### LUXEBERRY WOOD FINISH

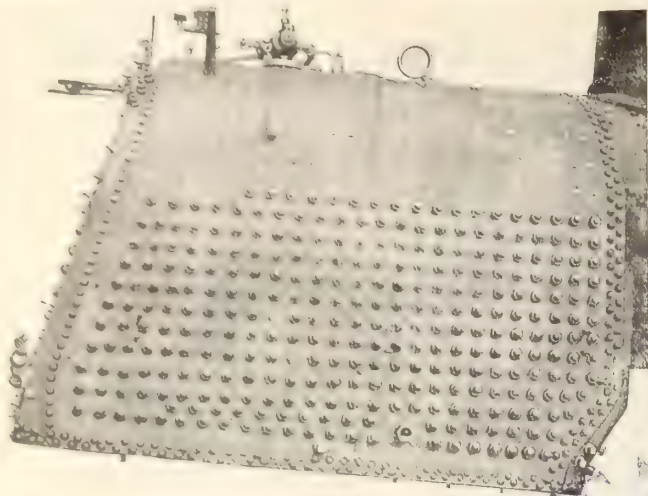
A finish for general interior work, and unequalled for producing a handsome and durable finish on all woods.

**BERRY BROTHERS**  
(INCORPORATED)  
World's Largest Varnish Makers

WALKERVILLE

ONTARIO





## *The Perfect Stay*

*For Locomotive Fire Boxes*

## **Tate Flexible Staybolts**

Are now in use on 425 Railroads of the United States as well as the main Railroad Systems of Canada.

RECOGNIZED AS THE MOST ECONOMIC FLEXIBLE STAYBOLT now in the market, because the Tate Bolt has demonstrated its true functions as a mechanical appliance to service fire box requirements.

MANY RAILROAD SYSTEMS have kept accurate service records and show remarkable increase in the earning power of the locomotives that have been equipped with complete installations of the Tate Flexible Staybolt.

**FLANNERY BOLT COMPANY, Vanadium Building, Pittsburgh, Pa.**

Manufactured and sold in Canada by Canadian Allis-Chalmers, Limited, General Offices, Toronto, Ont.



### **GRAND TRUNK HOTELS**

**The Chateau Laurier, Ottawa, Ont.**

Accommodation, 350 rooms. Rates \$2.00 per day and upwards, European Plan.

**The Fort Garry, Winnipeg, Man.**

Accommodation, 300 rooms. Rates \$2.00 per day and upwards. European Plan.

**Hotels under construction:**

The Macdonald, Edmonton.  
The Qu'Appelle, Regina.  
The Prince Rupert, Prince Rupert.

**G. T. BELL,**  
Passenger Traffic Manager,  
Montreal, Que.

### **EXCELLENCE COUNTS!**

## **Excellence in Railway Service**

is expressed in what the

**Grand Trunk System**  
**The Double Track Route**

is offering the Travelling Public of Canada.

**Unexcelled Road Bed**  
**Superior Dining Car Service**  
**Courteous Attention**  
**Modern Equipment**

The Grand Trunk System reaches all trade centres in Eastern Canada, and is now a large factor in Western Canada traffic through the Grand Trunk Pacific Railway, recently completed to the Pacific coast.

**W. P. HINTON,**  
Assistant Passenger Traffic Manager,  
Montreal, Que.



## The Science of Water Treatment

The Dearborn Company was organized because of the conviction on part of its founders that a scientific handling of the water treatment question was the only solution for the steam user of the troubles constantly arising as a result of scale formation, foaming, corrosion and pitting of boiler tubes, with all the attendant injury to the boilers, loss of heating efficiency, and waste of fuel.

Periodical removal of scale is unsatisfactory since there is a constantly increasing ratio of heat loss and fuel waste—as the scale gradually forms—aside from the injury to the boilers.

The Practical Method is **Prevention** and this can be effectively done only by attacking the mineral ingredients in the water with the proper reagents, changing their nature and character and eliminating their harmful qualities.

The application of scientific knowledge is most important in the choosing of reagents. Provision must be made for the various minerals present in the water, determined by analysis, as well as for the by-products that will be formed as a result of reactions brought about. Failure to give this phase due consideration may result in more serious trouble than the first condition of the water produced.

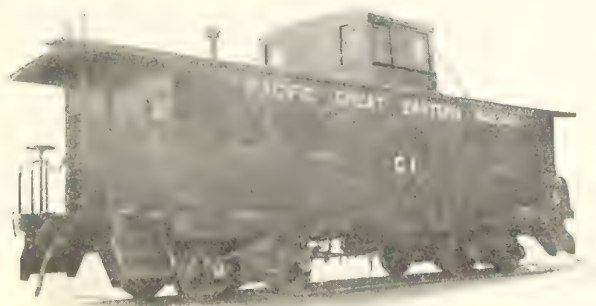
Unscientific “dope” compounds, ineffective and often harmful, have caused steam users endless annoyance and trouble.

We’d like an opportunity to demonstrate results by our methods. Gallon samples of the water supplies for analysis constitute the first step. May we have them?

**Dearborn Chemical Company of Canada, Limited**

Office and Works,  
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## “Made in Canada” for a Canadian Road



Type of Caboose Car built for Pacific Great Eastern Railway

There is a “NATIONAL” Car for your requirements regardless of what they may be.

If your rolling stock bears a “NATIONAL” Trade Mark it is a sufficient guarantee that only first-class labor and materials have entered its construction.

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## National Steel Car Company, Limited

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ADDRESS INQUIRIES TO HAMILTON

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**Hamilton, Canada**

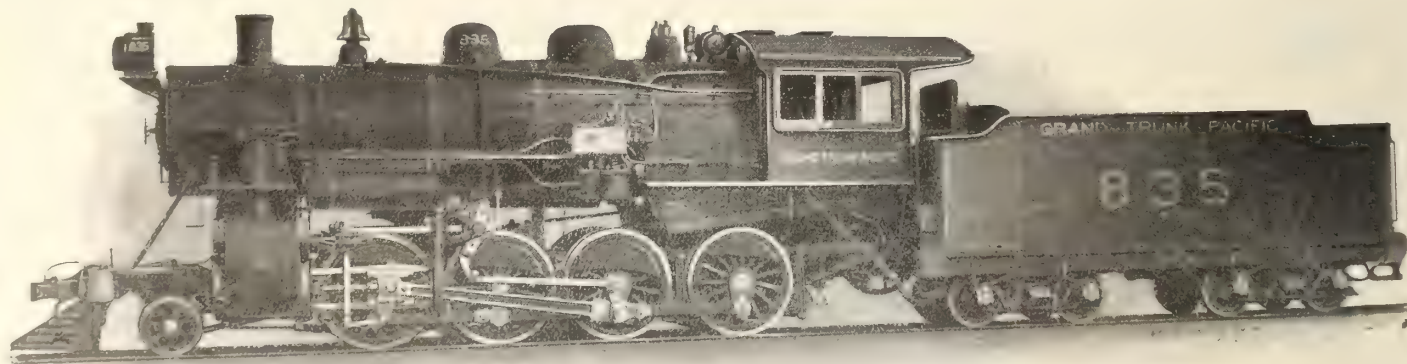


MODERN HIGH-CLASS  
**ROLLING STOCK**



**Passenger, Freight  
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 Car Castings,  
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 Parts.**

**CROSSEN CAR COMPANY, LTD.**  
 COBOURG - ONTARIO



Consolidated Type Locomotive Built for Freight Service on the Grand Trunk Pacific Railway.

# LOCOMOTIVES

Long experience, new equipment, efficient management and expert workmen, are guarantees that our Locomotives will give record service. Over 1,200 Locomotives have been built at our Works since the erection of the plant. We are builders of Simple and Compound Locomotives adapted to every variety of service, for Railway Contractors, for Industrial Purposes, Mines, all classes of Railway Work, etc.

We are also builders of stationary boilers, suitable for contractors and industrial plants. Grey iron castings—any size or shape—ordinary or intricate—made promptly. New foundry, splendidly equipped. We would be pleased to quote on castings—singly or by contract. We also make drop forgings of all descriptions.

**CANADIAN LOCOMOTIVE CO., Limited, Kingston, Ontario**



# Nova Scotia Steel and Coal Co., Limited

*Manufacturers of*

MARINE, RAILWAY AND GENERAL ENGINEERING FORGINGS OF ALL SHAPES AND UP TO 40 TONS IN WEIGHT, MADE FROM BEST ORDINARY OR HARMET FLUID COMPRESSED OPEN-HEARTH STEEL. OUR FORGE IS EQUIPPED WITH THE MOST MODERN STEAM HYDRAULIC PRESSES.

*RAILWAY TRACK MATERIAL, fish plate, tie plate, track bolts, spikes, tee rails—12 to 40 lbs. per yard.*

ROLLED STEEL FOR CAR BUILDERS' USE: Spring, machinery, tire, angle, and merchant bar steel, bright compressed shafting, rivets, tank plate—12-gauge up to 1" and 50" wide cold twisted steel bars for reinforced concrete work.

ALSO MINERS AND SHIPPERS OF THE CELEBRATED "OLD SYDNEY" COAL.  
HIGH CALIFORIC VALUE—LOW ASH—UNEXCELLED FOR STEAM-RAISING PURPOSES.  
BEST HOUSE COAL MINED IN CANADA.

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NEW GLASGOW, N.S.

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## THE NEW FAIRMONT MOTOR CAR OUTFIT

is the result of many years of successful experience building Motor Car Engines.

It has beautifully smooth throttle control like all automobiles—any speed from 3 to 40 miles per hour, **and uses less gas per month than "Hit and Miss" engines.**

Car starts without pushing. Belt is tightened by Sliding Base Lever.

Write for our NEW HAND CAR ENGINE FOLDER. **The greatest two-cycle improvement ever made** is fully explained—it saves many dollars' worth of fuel each year and gives superior service.

Take advantage of our Easy Payment Plan now—before the Spring Rush commences.

**FAIRMONT MACHINE CO.,**

**Dept. W, FAIRMONT, MINN., U. S. A.**





# CANADIAN NORTHERN RAILWAY

**Rail Hotels  
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Over 7,500 Miles in Operation.

Traverses the Most Fertile  
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Canada.

Thousands of Free Home-  
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Open for Settlement on Its  
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Reaches All the Principal  
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Gives Access to the Best  
Sporting and Tourist  
Country in Six  
Provinces.

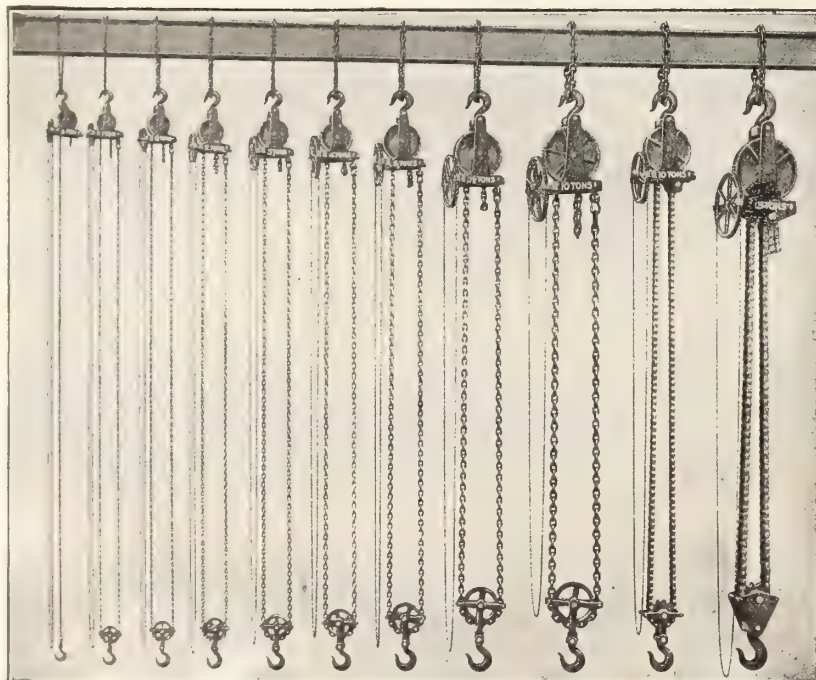
For Rail and Steamship Tickets, Parlor and Sleeping Car Reservations, Literature and All Information, Apply to Nearest Agent, or the General Passenger Departments.

Halifax, N.S.  
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**Canada's Second Transcontinental**

Toronto, Ont.  
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## MORRIS WORM GEAR CHAIN BLOCKS.



**WE CARRY THE  
LARGEST AND MOST  
COMPLETE STOCK  
OF CHAIN-BLOCKS  
IN ALL CANADA**

If your dealer is unable  
to quote you prices ask  
for Bulletin A7. We will  
mail it promptly.

**THE HERBERT MORRIS CRANE & HOIST COMPANY, Limited,**  
EMPRESS WORKS, PETER STREET, TORONTO.



# Heavier Trains—Less Coal and Water Per Trip



PACIFIC TYPE LOCOMOTIVE — INTERCOLONIAL RAILWAY.

Total weight of engine, 243,500 pounds; weight on drivers, 154,000 pounds; diameter of drivers, 73 inches; boiler pressure, 180 pounds; cylinders, 23½ x 28 inches; maximum tractive power, 32,400 pounds.

On a 185 mile run at an average speed of 40 miles per hour, these new Pacific type locomotives handle 10 cars and consume 12,884 pounds of coal and 9,750 gallons of water per trip.

Pacific type locomotives built five years ago, handled 9 cars on this same run at the same speed, but consumed 17,620 pounds of coal and 14,250 gallons of water per trip.

This is a saving of 26.9 per cent. in coal and 31.6 per cent. in water, with one extra car.

## MONTREAL LOCOMOTIVE WORKS, LIMITED,

DOMINION EXPRESS BUILDING, MONTREAL, CANADA

# Nova Scotia Car Works

## LIMITED



MANUFACTURERS OF

POSTAL CARS, BAGGAGE CARS, TRAM CARS, MINING CARS, DUMP CARS  
STEEL UNDERFRAME CARS AND WOOD FREIGHT CARS

ALSO MAKERS OF  
CHILLED IRON CAR WHEELS

HALIFAX

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NOVA SCOTIA



# The Sign of the Times



Enamelled iron signs are ideal for station name and station door signs.

They are much superior to a painted wooden sign, which has to be repainted at frequent intervals, and they last a lifetime.

There is absolutely no wear to them, and we guarantee that they will not fade or be affected by the weather in any way.

We will be pleased to quote you prices on request.

## Acton Burrows Limited

70 Bond Street, Toronto, Ont.



### Pedlar's "PERFECT" Rivetted Culvert

GIVES best results in railway construction work. Being made of heavy gauge anti-corrosive

this culvert will not rust, and is not affected by frost.

Pedlar's "PERFECT" Rivetted Culvert is 29 times as strong as a plain iron pipe of similar gauge. Made in all sizes from 8 inches to 84 inches in diameter, and shipped assembled in lengths up to 40 feet—coupling bands supplied for longer lengths.

Now that the plans for spring construction are receiving the attention of Engineers and Contractors, and the question of equipment and material is uppermost in their minds, is the time to investigate the merits of Pedlar's "PERFECT" Rivetted Culvert.

Write for complete Culvert Reference Book, No. 4, giving drainage tables and full data regarding sizes required to handle various flows of water.

SOLE MANUFACTURERS

**The PEDLAR PEOPLE, Limited**  
OSHAWA, CANADA

MONTREAL

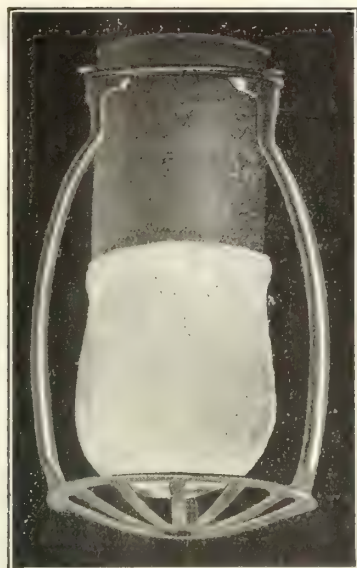
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## Pintsch Mantle Light

No other system of car lighting gives clean, safe and efficient light without intricate mechanism, subject to defects and failures. Pintsch Mantle Light is the only absolutely dependable method of lighting railway cars.

### The Safety Car Heating and Lighting Company

2 RECTOR STREET, NEW YORK

718 TRANSPORTATION BUILDING, MONTREAL

# ANNOUNCEMENT

## TO THE CANADIAN STREET RAILWAY COMPANIES

Wish to advise, we have opened a Canadian Plant for the manufacture of the

**KNUTSON Trolley Retriever**  
**IDEAL Catcher**  
**Pressed Steel Headlight**  
**SIMPLEX Trolley Base**

and other specialties and by February 25th, will be in a position to make shipment of our products from our Canadian Plant. Feel certain that this move will be appreciated by the Canadian Street Railway Companies and await the continuance of the valued patronage given us by the numerous lines in Canada.

## THE TROLLEY SUPPLY CO., Canton, Ohio



# Efficient Files

When better files are possible they will still bear these famous names

**KEARNEY & FOOT  
GREAT WESTERN  
AMERICAN  
ARCADE  
GLOBE**



**MADE IN CANADA**

For 50 years we've made files only. To-day we make sixty million each year. From raw steel to finished file we supervise every step.

When any improvement is possible you'll find it first in the "Famous Five."

To cut filing cost—replace all half-worn files. At that point they lose efficiency. They require more time and more effort to remove less stock less accurately. You save money by using more files.

What you save in time, labor and money more than pays for the extra files.

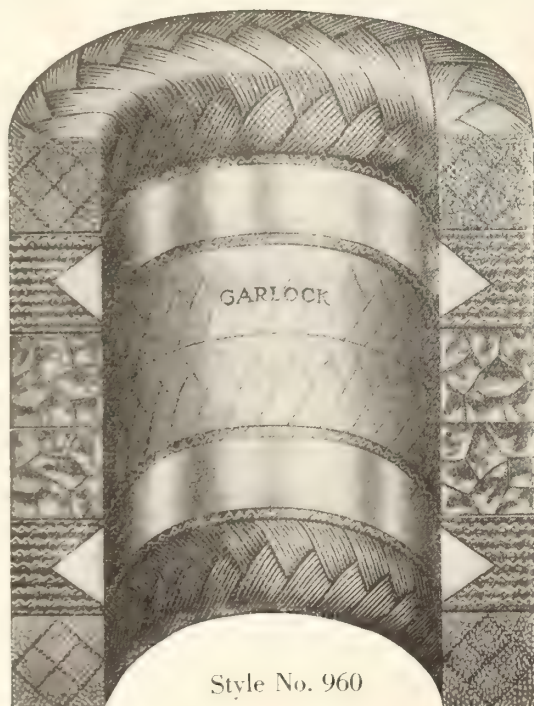
**NICHOLSON FILE COMPANY**

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Everywhere**

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"File Filosofy"—the first and only handbook on files. Send for your free copy now.



Style No. 960

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Marine Engine Piston Rods.

Use Garlock Style Number 200.

Cold Water Piston Rods

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High Pressure Cold Water

Use Garlock Style Number 960.

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Use Garlock Style Number 1907.

These packings are guaranteed to give satisfactory service under the above conditions.

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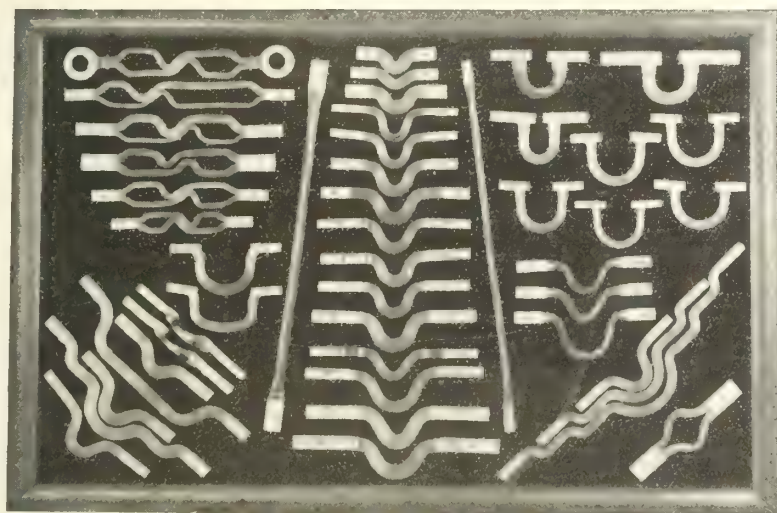
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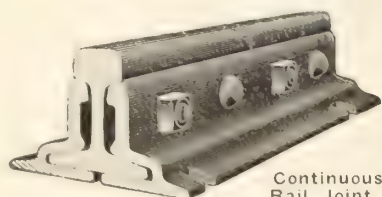
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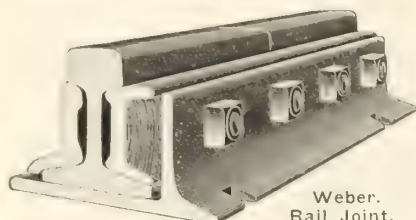
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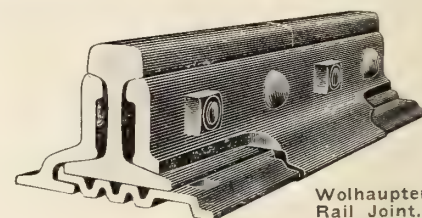
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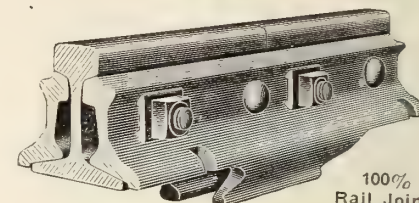
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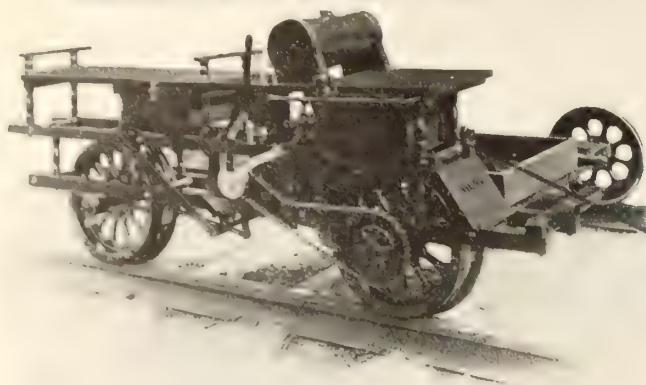
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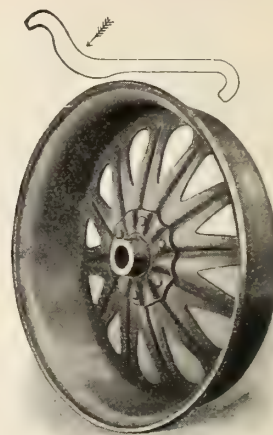
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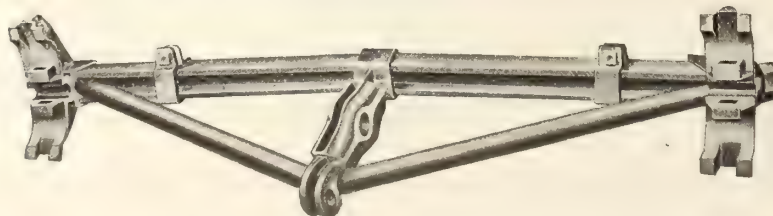
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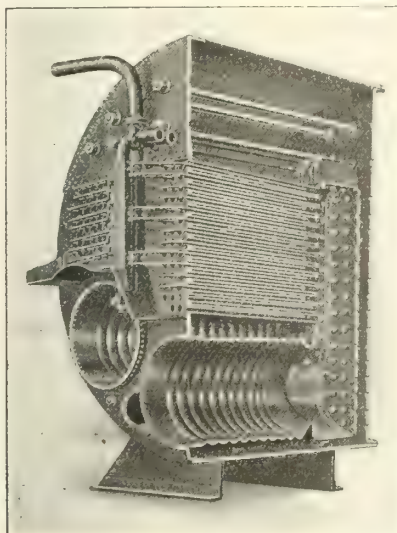
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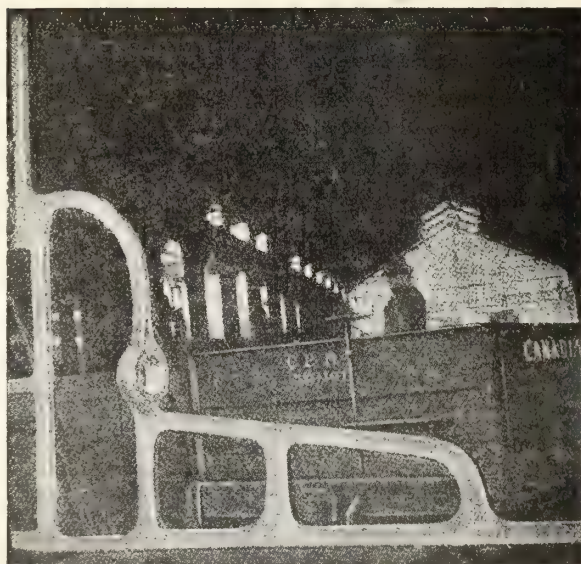
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# Canadian Railway and Marine World

March, 1915.

## What is the Capacity of a Single Track Railway Line?

By V. I. Smart, Vice President and General Manager, General Railway Signal Co. of Canada, Ltd.

The following paper has been written with a view to reducing to a concrete form, some methods of arriving at what is the capacity of a single track line. It is an attempt to show a means of arriving at the relative value of different elements, which tend to reduce the amount of tonnage that can be hauled in a given time.

A train moving along the track at a given speed has kinetic energy which would raise it vertically a definite number of feet, and every speed has an equivalent vertical height. The relation of speed to the vertical height is expressed by the formula  $0.035V^2$ , where  $V$  is the speed in miles per hour. That is, the kinetic energy of a train running 10 m.p.h., would be capable of raising that train 3.5 ft. If, therefore, ordinates be erected on the engineering profile equal to the vertical height—equivalent to the speed at different

is made at the end of this paper. The reduction in speed due to the application of breaks, is found from the formula,

$$0.035V^2W$$

$$L \quad \frac{W}{0.7fw} + Rt \quad 2000$$

$L$  is the distance in which the stop is made;  $V$ , the speed in m.p.h.;  $W$ , the weight of loaded cars;  $w$ , the weight of empty cars;  $f$ , the coefficient of friction taken here as 1-6; and  $Rt$ , the train resistance per ton.

The amount of tonnage which can be hauled over a single track is dependent on a number of conditions, among which are:— (a) Passing track facilities and train schedules. (b) The tractive effort of the locomotive. (c) Terminal facilities. (d) The full

amount of increase in the leaving interval, at every meeting point.

Fig. 4 shows the effect of attempting to run the same number of trains as in fig. 2, when the passing tracks are not all equally spaced. The result would be, that if the southbound trains are superior, the northbound trains could not get through at all.

Fig. 5 indicates the train schedule that would be necessary when passing tracks are unevenly spaced. It is apparent that the interval between the leaving times of the trains would now have to be twice the interval necessary to run between the two passing tracks which are spaced farthest apart, and that in addition delay is introduced at all other passing tracks equal to twice the difference between the closer spaced passing tracks and the greater.

Fig. 6 is the same as the above, except that

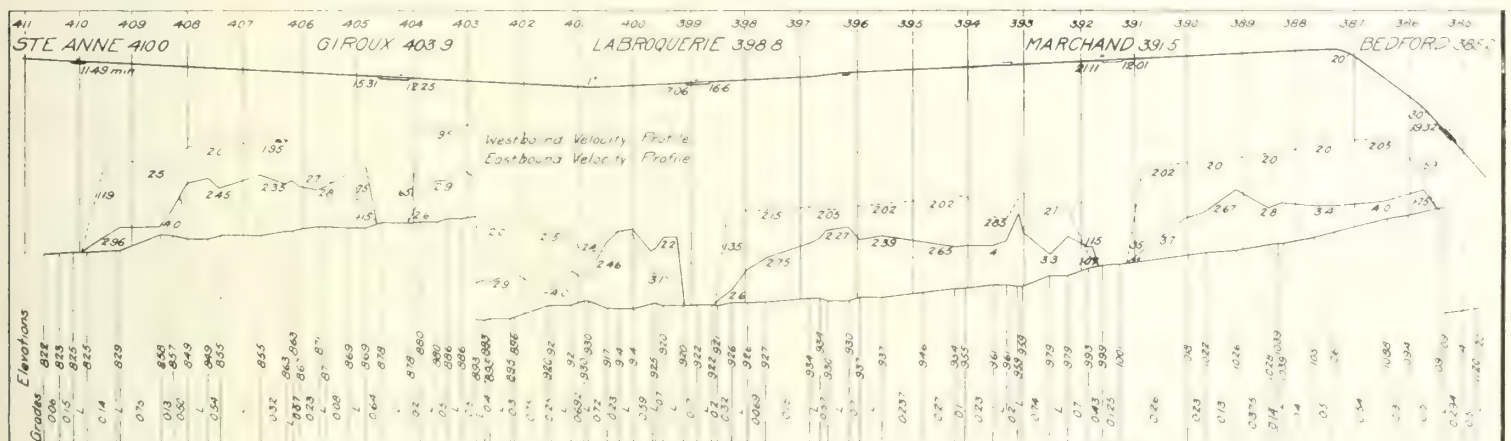


Fig. 1.—Engineering and Velocity Profiles of Line under Discussion.

points on the road, and the ends of these ordinates are joined up, a second profile, representing the operating conditions of the train, are secured. Such an operation is shown, dotted for westbound, and solid for eastbound, in fig. 1. From this a schedule of the train can be made.

The average speed of a train between any two points may be obtained by finding the area of the figure bounded by the line representing the engineering profile, and the operating, or velocity profile. Dividing this area by the horizontal distance between the two points gives the average velocity height between the two points, which is equivalent to a certain speed in miles per hour. On the profile, fig. 1, the average speed has been worked out between each mile post, and is shown on the bottom margin; below these are the number of minutes it would take the train to run between the two mile posts. Summing up these, the time taken between the passing tracks is noted below each station, that on the right showing the time taken in running from the passing track next to the right, to the station below which the figures show; similarly those to the left denote the running time from the next passing track to the left. An explanation of the process of working out this velocity profile

ing grade of the division. (e) The average rate of the grades.

The accompanying train sheets, figs. 2 to 8, develop the principles involved in the laying out of passing tracks on a single track line, and the effect on the train schedules. In drawing them up the same method is used as is employed by the superintendent in making up his schedules, and which is commonly known as "stringing" the trains. The heavy horizontal lines represent passing tracks, the vertical lines denote time; the interval between the passing tracks is measured in the time necessary to run between them, the diagonal lines represent the train movement.

In fig. 2 the passing tracks are equally spaced. The maximum train schedule would then be one where the leaving times of the trains would be twice the passing track interval apart.

Fig. 3 illustrates the effect produced on the north bound trains, by the disregard of the above relation between train schedule and passing track interval. The effect of increasing the interval between the departure times of certain of the southbound trains, is to introduce an element of delay on all northbound trains, which these irregularly spaced trains have to meet, by just the

there is but one irregularly spaced passing track; the law remains the same.

The effect of attempting to run more than the number of trains determined by the passing track intervals, is illustrated in fig. 7, the result being that an element of delay is introduced on the opposing trains equal to the regular schedule leaving interval at every meeting point, almost the amount of time necessary to run two trains over the division.

Fig. 8 shows the effect of introducing trains into the schedule of different speeds. It can be seen from this diagram that trains running 3, 5, 7, 9, etc., times as fast as the others, will eliminate a train in the opposing direction, every 3rd, 5th, 7th, etc., whereas trains running 2, 4, 6, 8, etc., times as fast will eliminate an opposing train every 4th, 8th, 10th, 16th, etc., and delay the intermediate trains by the amount of their leaving interval. The number of trains affected when the multiple of the speed is an odd number will vary inversely as the multiple. The number of trains affected when the multiple of the speed is even, will vary inversely as twice the multiple of the speed, therefore if different speed trains are in service they will produce the least objectionable effect when the speeds of the



even multiple.

Now it will be seen that the time of the full load train between stations is as follows:

	Eastbound.	Westbound.
St. Anne		
Labroquerie	15.31	11.49
Marchand	17.06	12.25
Bedford		

condition being reached when the time required to run between all passing tracks is equal.

The maximum tonnage over our particular district, assuming that no change is made in the passing tracks, can be determined as follows:—The time taken by an eastbound train between Labroquerie and Marchand is 21.11 mins., and by a westbound train 16.01

be reduced to 70,920 tons, a loss of 8,136 tons in the 24 hours.

The above is the result obtained by using one class of locomotive and with no interference from passenger trains. If we introduce one passenger train each way we will still further reduce the capacity of the line. For, assuming the speed of the passenger train will be 30 m.p.h. between the two sta-

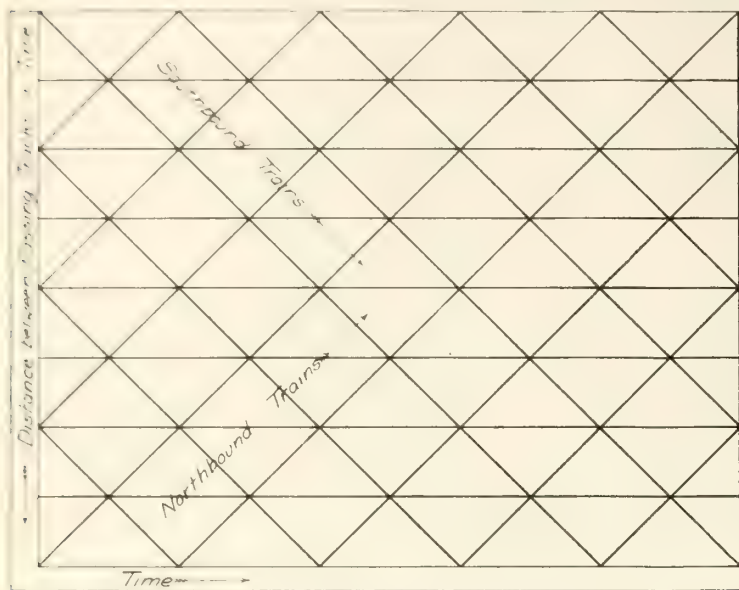


Fig. 2.—Passing Tracks Equally Spaced, with Leaving Time of Trains at Twice the Passing Track Interval Apart.

7.3	21.11	16.61
Marchand		
6.3	19.32	12.01
Bedford		

It is evident that the capacity of this line is determined by the amount of traffic which can be handled between Labroquerie and Marchand, in 24 hours, for this piece of line is the determining element on this district, as it requires the longest time to operate

mins., and allowing 3 mins. for a train to head out of Labroquerie passing track, and 3 mins. to head in to Marchand passing track, the total time taken for two trains to run between these passing tracks is 43.72 mins., or an average of 21.86 mins. a train. If we let C be the tonnage capacity of the line in 24 hours; W, the average tonnage rating of the locomotive on the division; and T, the

tions above, the distance being 7.3 miles, it would take 14.6 mins. to run between the stations; that is the line between the two stations is tied up, so far as freight movement is concerned, for 14.6 mins. for each passenger, or in tons  $54 \times 14.6 = 776$  tons cut off the 24 hour capacity of the line for each passenger train.

If we assume in our example, two pas-

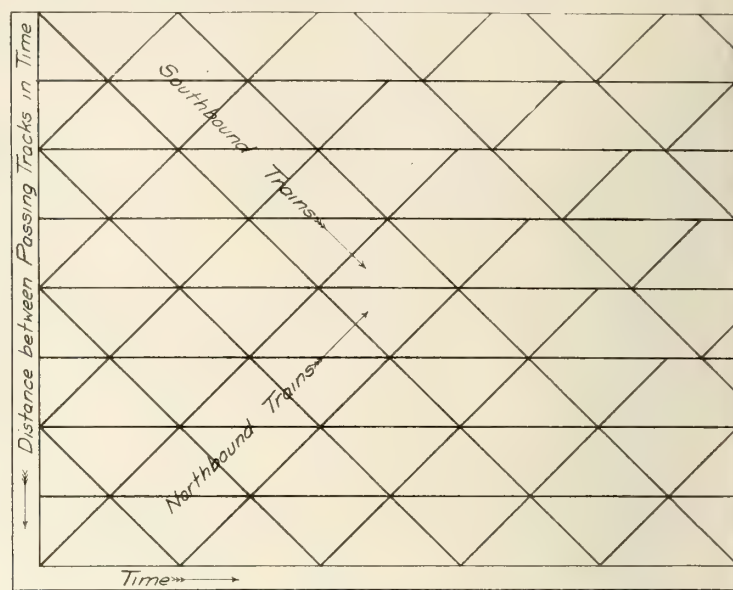


Fig. 3.—Effect on Northbound Trains of Increasing Intervals between Departure of Certain Southbound Trains.

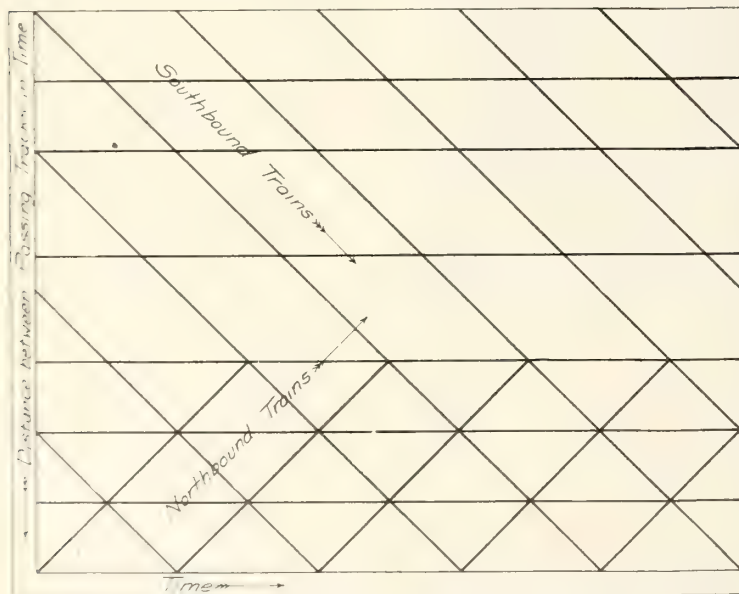


Fig. 4.—Effect of Attempting to Run Same Number of Trains as in Fig. 2 with Passing Tracks Unevenly Spaced.

between these two stations, and no more tonnage can be hauled over the division, than can be hauled between these two points in a given time.

By a rearrangement of the passing tracks, this particular throat may be made to disappear, but the new throat will appear as the interval between passing tracks which takes the greatest time to operate, the ideal

average time for a train, between the passing tracks which require the longest time to operate on a given district, then in the case

$$60 \times 1200 \times 24 \text{ above } C = \frac{T}{T} = 79,056 \text{ tons, or } 54.9$$

tons a minute. If the clearance rule is in effect requiring inferior trains to clear superior trains by five mins., the tonnage will

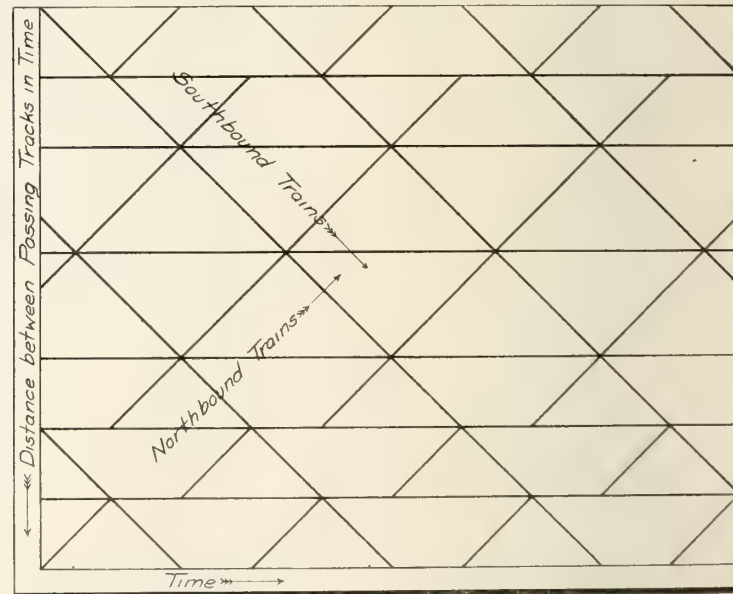


Fig. 5.—Train Schedule when Passing Tracks are Unevenly Spaced.

senger trains each way, the reduction in tonnage would be  $776 \times 4 = 3,112$  tons, leaving now  $70,920 - 3,112 = 67,808$  tons. The effect of the passenger trains to cause additional delay in this particular case will be very slight, and could probably be made to show no further delay, by careful scheduling, as this section is too short to get the effect. If a full division is being considered,



this delay must be taken into account. The law has been stated above.

The delay occasioned to trains at other stations than the terminals, and the two stations between which the longest interval occurs, is as we found above, twice the difference between this longest interval and the other passing track intervals. In our example this delay would occur at Giroux

tonnage possible, and that the nearer this is approximated the more efficient is the operation.

We have now considered all of the elements tending to reduce traffic mentioned above, except the question of insufficient terminal facilities. It is self evident that the tonnage capacity of the line requires that at the two terminals there must be, at least,

be capable of taking care of 683 cars in 24 hours.

The usefulness of such a calculation as the above, consists in being able to determine what are the elements in the operation of a division which needs improvement, and their relative importance. If under existing conditions it appears that double track is necessary, a calculation as above gives a

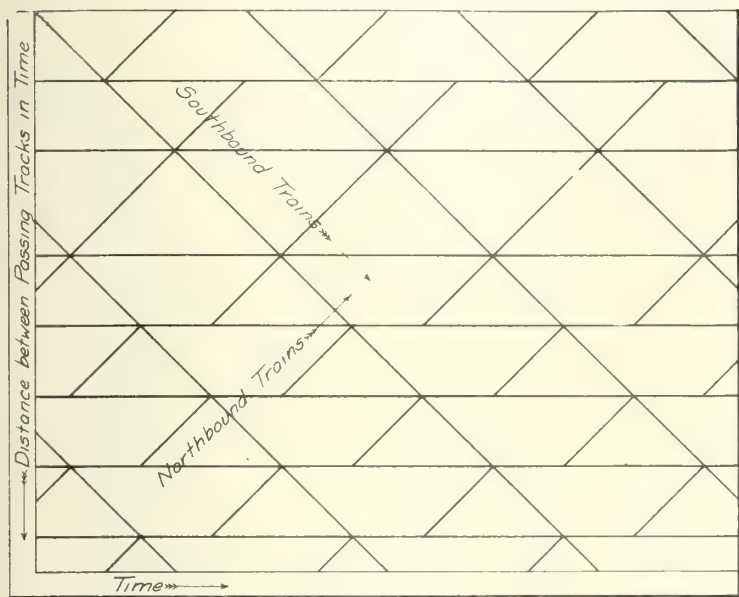


Fig. 6.—Train Schedule with One Unevenly Spaced Passing Track.

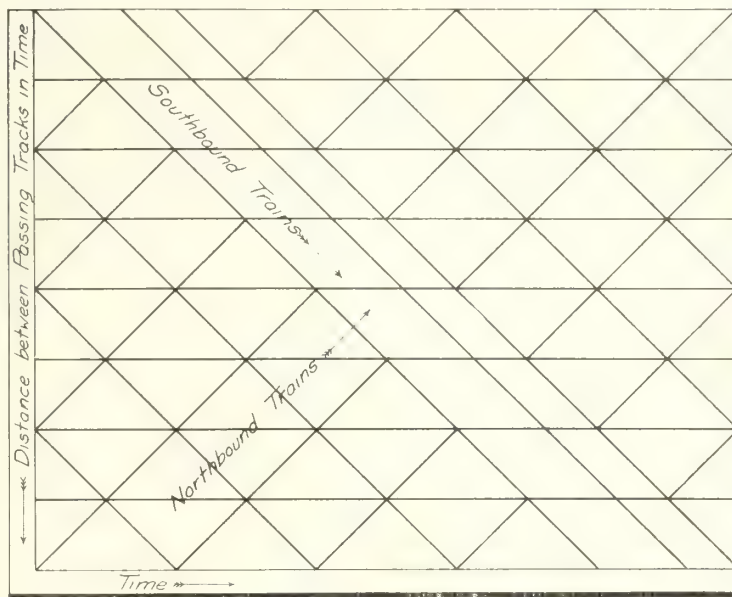


Fig. 7.—Effect of Attempting to Run More than the Number of Trains Determined by the Passing Track Intervals.

and would be 8.42 minutes for every west-bound train. That is  $8.42 \times 54 = 454.68$  tons per train affected. The number of trains

would be  $\frac{67,808}{1,200 + 227} = 48$  trains, and the total

loss of tonnage would be  $24 \times 454.6 = 10,896$  tons, giving the capacity now of  $67,808 - 10,896 = 56,912$  tons.

The effect of the delay due to the delivery of 31 orders is an element which, with a line so short as the one we are considering, could be neglected, as the orders will be delivered at St. Anne and Bedford, therefore not affecting the running time in this section. However for illustration, assuming that the eastbound trains are given their meet orders at Giroux, the time taken in stopping, delivering and starting, will consume not less than 10 mins., or  $10 \times 54 = 540$  tons per train. The number of trains then would be reduced to 19 each way, and the maximum tonnage would be  $56,912 - 10,260 = 46,652$  tons.

There is one other element which we can value, that is the delay on slow trains by fast ones running in the same direction. It will be seen that in the above the passenger trains reduce the tonnage due to tying up the line between passing tracks for following movements until the fast train reaches the next station in advance, or a clearance of 10 mins. is allowed. Assuming that the 10 mins. rule is in force, the delay at such passing track for one passenger train each way will be 10 mins. at St. Anne,  $10 \times 8.42 = 1.58$  min at Giroux, 10 mins. at Labroquerie, 10 mins. at Marchand in the one direction, and 10 mins. at Bedford, 10 mins. at Marchand, 10 mins. at Labroquerie, and 10 mins. at Giroux, or a total of 71.58 mins., being equal to 7,730 tons lost in capacity for two passenger trains each way, leaving a maximum now of  $46,652 - 7,730 = 38,922$  tons per 24 hours.

While it is quite possible that the maximum tonnage may never be realized, yet it is quite evident that this is the maximum

capacity in the yards to handle the tonnage which can be handled over the line. As however the capacity of a yard is determined by the number of cars handled, rather than the tonnage, the unit which we have used must be translated into number of cars.

The average capacity of cars in service in Canada in 1910 was 28 tons per car. The ratio of empty car mileage to loaded car

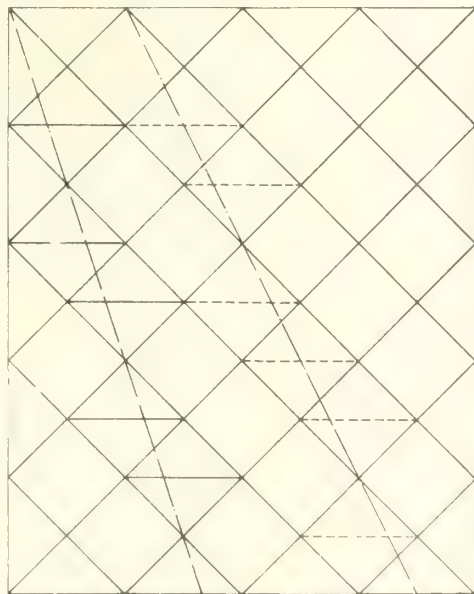


Fig. 8.—Effect of Introducing Trains of Different Speeds into Schedule.

mileage was 30%. Assuming the tare as a third of the total car weight, then the average car would weigh  $28 + 9 = 37$  tons. This divided into half the total tonnage, and multiplied by 130% would equal the number

of cars,—i.e.  $\frac{38,922 \times 130}{2 \times 37} = 683$  cars. There-

fore the yard at each end must in this case

means of determining whether all the facilities of the single track have been worked out to their maximum, or if some improvement, costing less than double tracking, can be undertaken in lieu of the second main track, thus indefinitely delaying the capital outlay, and increase in fixed charges.

Moreover such a calculation gives for a division the ratio of efficiency, by dividing the tonnage actually hauled, by the calculating maximum, thus as between different divisions, giving efficiency ratios, which are comparable. By such a means the operating forces on different divisions may be compared.

Further with respect to the dispatching method. It is seen from the above, that in order to obtain the maximum, every minute of lost time must be eliminated. The time sacrificed on account of delivering 31 orders, the clearance rules, flagging rules, etc., must be reduced to a minimum. The only method that will do this safely is a proper designed block system, one on which the block for head on movement is the distance between the passing tracks, but which will permit of the movement of trains in the same direction closer than the passing track interval, as with trains of different speeds considerable delay is introduced if the slow trains being passed are compelled to wait until the train passing has reached the next passing track in advance. I do not believe that fleet-trains, or running certain trains closer together than the schedule based on the passing train intervals, will tend toward maximum traffic, on account of the effect of these fleet-trains on the opposing trains, but it is absolutely necessary to allow permissive movements in the same direction, between passing tracks, to take care of the variation in speeds of different trains, and the greater the number of speed trains, the greater the necessity for such permissive movement.

The possibility of permitting two trains to approach each other head on, even if the possibility of collision is prevented by inter-



mediate signals, must be carefully avoided, as this introduces the possibility of additional delay which would materially reduce the capacity.

If the above reasoning is correct, that is that the necessity for following or permissive movements is due to running trains of different speeds on a division, then the advisability of putting in signals between passing tracks is dependent on the proportion of high speed trains to slow speed trains on a division, and therefore proportional to the amount of tonnage loss due to the inability of slow trains to get away from the passing tracks quickly, after having been passed by a high speed train.

This loss in tonnage means a loss in possible revenue, and when this potential loss in revenue is equal to the cost of maintenance and operation of the signals necessary to eliminate this tonnage loss, plus the inter-

district illustrated in the above —=11.8

tons per signal in the 24 hours. It has been shown above that the tonnage lost due to this inability to follow was, on this district 7,730 tons, enough tonnage to pay for 65 signals on 24 miles of track.

The question naturally arises how many signals could be used economically? It is quite evident that if the slow speed train is to get away as soon as possible after the fast train has passed, that the first block out from the passing train must be short enough to permit the entrance signal to assume, at least, the 45 degree position, in the least possible time, bearing in mind that the minimum length of block must not be less than the braking distance of the maximum speed train, and that the next block length would be such as to allow the high speed train to

296.9

25

the block lengths succeeding the first block out would be about 9,200 ft. in length. This would determine all succeeding block lengths, except that in order to facilitate meets the distant signal indication for the next passing track should be set as close in to the passing track as possible, or it would be probably located out a distance equal to the maximum train length plus its braking distance. This would be approximately 3,500 ft. The above is illustrated in figs. 9 to 11.

Now if we summarize the different values in tons lost for the different elements which we have considered we can approximately show the relative value of each.

Operating:	Tons.	Ct.
Clearance rules .....	8,136	20.5
Lack of ability to follow .....	7,730	19.5
31 orders .....	10,260	25.5
Irregularly spaced passing tracks .....	10,896	27.0
Passenger trains .....	3,112	7.5
		100.0

65.5% of the tonnage loss on this line is due to the method of operation, 27% is due to the irregularity of the passing track spacing and 7.5% is due to the passenger train service. The introduction of automatic signals on this line would apparently have the greatest effect in increasing the tonnage, spacing of the passing tracks being next in order, assuming that the terminal yards are sufficient to take care of the tonnage when increased.

The tractive effort of the locomotive is

$$O 8 P d s$$

found from the formula  $T = \frac{O 8 P d s}{D}$  where

T is the tractive effort; P, boiler pressure; d, diameter of cylinders; s, stroke; and D, the diameter of the locomotive driving wheels.

In working out the data for the profile here shown, I assumed that the class of locomotive being used on the district was of the following dimensions:—

Weight on drivers .....	131,200 lbs.
Locomotive and tender .....	152 tons.
Boiler pressure .....	185 lbs.
Cylinders .....	22 x 26 ins.
Dia. of drivers .....	63 ins.

The tractive effort of this locomotive with full cut off would be 31,400 lbs. When however the locomotive reaches a certain speed the cut off must be changed, so as to admit less steam to the cylinders, and this will cause a reduction in the tractive effort of the locomotive. The point where the cut off will be modified is a function of the speed, and will be found by the formula, Speed

factor =  $\frac{56.02 V s}{D}$  The speed factor is given

in revolutions per minute of the driving wheels. Up to a value of 250 the locomotive will be operated with full ports; above this the cut off is reduced, and there is a rapid drop in the tractive effort of the locomotive. Fig. 13 gives the tractive effort curve for the locomotive above. The tractive effort curve is a straight line to 10.8 m.p.h., the rest of the curve is a hyperbola, that is the product of the ordinates and abscissae is constant, in the case of our locomotive this product is 339,120. This curve gives the theoretical tractive effort, but the actual tractive effort which it is possible to utilize at low speeds is dependent on the friction between the drivers and the rails. Using 0.2 as the coefficient of friction, and with 131,200 lbs. as the weight on the drivers, the actual tractive effort available is  $131,200 \times 0.2 = 26,240$  lbs. This value is shown on fig. 13, the balance of the curve being found by drawing a tangent from this point to the curve already found. This curve then gives the tractive effort of the locomotive from 10 to 40 m.p.h.

The resistance which the locomotive must

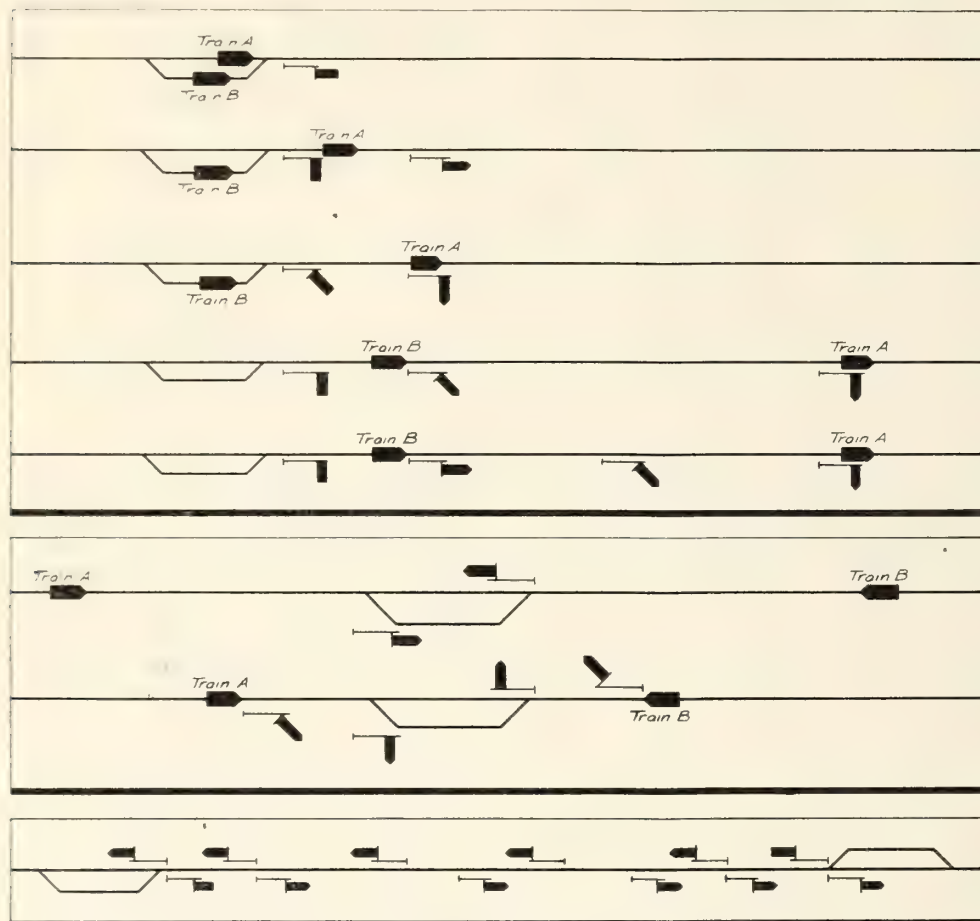


Fig. 9.—Fast Train Passing Slow Train at Siding. Fig. 10.—Trains Meeting at Siding.  
Fig. 11.—Distribution of Blocks between Sidings.

est on first cost and depreciation, then the point has been reached when the introduction of signals can be justified economically.

The average freight earnings on Canadian railways for 1913 was 0.753 cts. per ton mile; of this 70% was expended in cost of operation, leaving as net revenue 0.227 cts. per ton mile. Assuming that an automatic signal will cost \$800, and that the cost of operation and maintenance will be \$150 per year, the yearly charge for an automatic signal would be: Interest at 5%, \$40; depreciation at 7%, \$56; maintenance and operation, \$150; a total of \$246 per signal per year, or 67.4 cts. a day, as the cost per signal. If we divide this amount by 0.227 cts. we will get the ton miles over the division that must be added to the capacity of the line to justify the installation of one signal. This

is  $\frac{67.4}{0.00227} = 296.9$  ton miles, or in tons for the

pass the outgoing signal of the block before the following train has reached the outgoing signal of the first block.

As an illustration, assuming the speed of the fast train is 30 m.p.h., and that the braking distance for the maximum train, at its maximum speed, is 2,000 ft., the signal marking the end of the first block would be located 2,000 ft. out from the siding, the entrance signal of this block being located just beyond the siding switch, this 2,000 ft. would be run in 0.76 mins.

The train which has been passed can now head out and will pass the entrance signal at 45 degrees. Assuming that it takes this train 6 mins. to open the switch and head out on to the main line and close the switch, and an additional minute to run to the next signal, or 7 mins. in all, the fast train would have run  $3\frac{1}{2}$  miles, and therefore if the slow train is to be given a clear signal, the fast train must have passed two signals, or



overcome in running along a straight and level track is found by the formula:

$$R = 3.5 \times 0.0055 V^2 \frac{16}{(V-1)^2}$$

This is shown as the bottom curve fig. 12.

If the train has to be hauled up a grade, the additional resistance due to the grade is found from formula  $R = 20 \times$  rate of grade. These two formulae give the resistance in pounds per ton.

The ruling grade on the profile fig. 1 is 0.75%. Assuming that it is desired to load our locomotive for this ruling grade at a minimum rate of 10 m.p.h. the resistance which will have to be overcome will be  $R_t$  for 10 m.p.h., plus  $R_g$  for a 0.75% grade, i.e.  $4.2 + 15 = 19.2$  lbs. per ton. 19.2 divided into 26,200 (the tractive effort for 10 m.p.h.) gives 1,360 gross tons as the weight of the train that can be hauled over this district.

This locomotive being loaded for a speed of 10 m.p.h. on a 0.75% grade, would be able to operate with this load on a level track, or a less rate of grade than the ruling one, at a greater rate of speed than 10 m.p.h. If it is operating on a level track, there being no grade resistance, the 15 lbs. per ton of this resistance is no longer in evidence, therefore, there is 15 lbs. per ton of this tractive effort left available for acceleration.

0.75% grade, but that above this speed the rate decreases. It will be sufficiently accurate for our purpose if we use increases of speed of 5 m.p.h. The speed of 15 m.p.h. is equivalent to a velocity head of 8 ft., and by again referring to the curve in fig. 12, we find that at a speed of 15 m.p.h. this train can operate up a 0.85% grade. Using this new value, we continue our line to a point where it is 8 ft. above the engineering profile, here we can change the rate to that given on the curve for 20 m.p.h. This new rate could be used until the lines of the profiles had diverged 14 ft., but that at the foot of the grade we find that we have only risen 9.5 ft. above the engineering profile and that beyond this point the two lines are converging. When they have approached each other to 8 ft. we again change our rate to that given for 15 m.p.h., the two lines continue to converge however and when the distance between them is 3.5 ft. our train is capable of operating up a 0.75% grade. This also being the rate of the engineering grade the two profiles will parallel each other to the top of the grade. Continuing in this manner we secure a continuous operating profile of the line, which takes into consideration the tractive effort of the locomotive, the effect of the ruling grade, and the effect of the average grades, thus pro-

## The Alaskan Railway Surveys.

The commission of engineers appointed by the United States President to survey and report on possible routes for Alaskan railways has returned to Washington and will in a short time submit its plans and estimates. Four coast points, Cordova, Valdez, Seward and Portage Bay, have been considered as possible termini. Cordova, on the east shore of Prince William Sound, has a population of about 1,100. It is the terminus of the Copper River & Northwestern Rd., which could be extended from Chitina, 132 miles distant from Cordova, up the Copper River Valley and through the Alaskan Range to the Tanana and Fairbanks, a total distance of about 445 miles.

Valdez, from which now runs the government wagon road to Fairbanks, is situated on the north shore of Prince William Sound and has a population of about 1,500. The total distance from Valdez to Fairbanks over this route is about 380 miles.

Seward, on Resurrection Bay, has a population of about 600. It is the terminus of the Alaska Northern Rd., which extends northerly across the Kenai Mountains for 72 miles to the eastern end of Turnagain Arm, and which could be extended around Turnagain and Knik Arms to the Susitna Valley

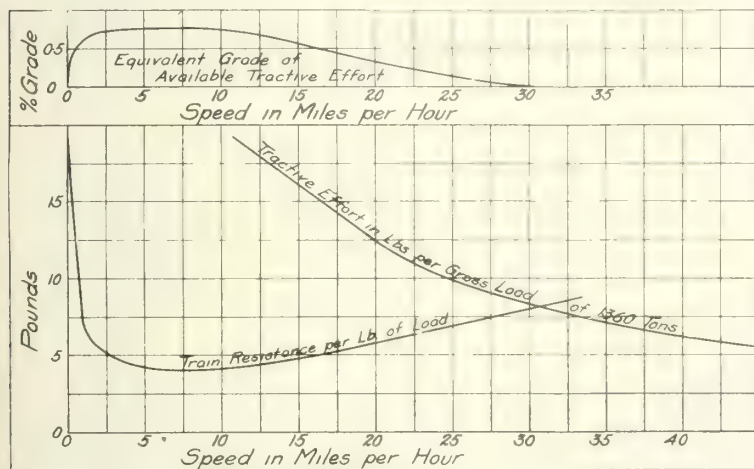


Fig. 12.—Equivalent Grade of Available Tractive Effort, Train Resistance and Tractive Effort Curves.

In fig. 13, the tractive effort is shown in pounds per ton for the locomotive with the gross load of 1,360 tons. Below this curve is the train resistance curve; then the intercepts cut off between the tractive effort curve and the resistance curve, is the amount of tractive effort unused if the train is on a level track, or if we divide the value of these intercepts by 20 (the resistance of a 1% grade) we have the rate of grade up which this locomotive can haul 1,360 tons and the speed in miles per hour which it can make on these grades. The upper curve gives these rates of grade for the different speeds.

With this combination curve in fig. 12, we can proceed to construct a velocity profile on the engineering profile, producing the operating profile shown in fig. 1. The method of constructing this operating profile is as follows:—Assuming that we are starting our full tonnage train from St. Anne. The locomotive is capable of operating up a 0.75% grade, and this was the basis of loading; then if we draw a line, rising above the engineering profile, fig. 1, at the rate of 0.75% from the starting point, and continuing this line until it is 3 ft. 5 in. above the engineering profile. A velocity head of 3 ft. 5 in. is equivalent to a speed of 10 m.p.h. Referring to fig. 12, we find that at this speed the locomotive is capable of operating up a

ducting what is to all intents and purposes an indicator card of the train operation. Such a velocity profile gives a simple means of locating signals, showing the spacing of signals on the engineering alignment in feet, measured in the time of running.

**Steel Ties** made of rolled channels, with wood blocks under the rails, are being tried on the Northern Pacific Ry. About 100 were laid in 1911, but some of them have been removed on account of difficulties in shimming track. During 1914 about 320 were put in, mainly at water stations where wooden ties were burned by cinders dropping from the locomotives. Ties of this general type, but under various names and with various modifications in the rail fastening, have been used experimentally at different times within the past 30 years.

**Steam Railway Fatalities.**—During December there were 15 fatal accidents to railway employes in the Dominion. Of these, 5 were due to collisions, 2 to being struck by trains or locomotives, 2 to being run over, 4 to electrocution and 1 to being shot.

**Revised passenger and station regulations** for the Intercolonial Ry. and the Prince Edward Island Ry. were approved by order in Council, Jan. 12.

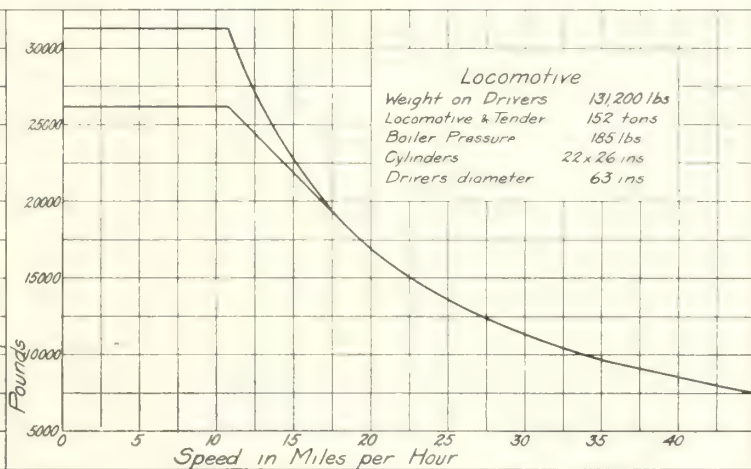


Fig. 13.—Tractive Effort Curve of Locomotive under Discussion.

and thence up to Broad Pass in the Alaskan Range and down the Nenana to the Tanana and Fairbanks, a total distance of about 460 miles.

Portage Bay is situated on the west coast of Prince William Sound, where no settlement now exists. It can be connected by a 15-mile line, in which there are about 3 miles of tunnel, with Turnagain Arm, and thence northerly through the Susitna and Nenana Valleys to the Tanana and Fairbanks, a total distance of about 410 miles.

In addition to the main trunk lines, branch lines to the Matanuska and Bering River coal fields are being considered. During the past summer the commission, with a large force of engineers, has been engaged on the survey and examination of these routes.

**Heavy rails** have developed some new physical weaknesses, one of the most notable being failure through crescent shaped pieces breaking out of the rail flanges, followed by at least one, and in many cases several, ruptures across the whole section of the rail.

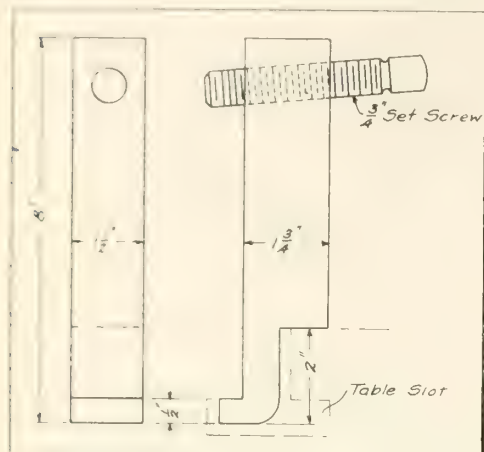
**The C.P.R. and the G.T.R. shops** are reported to be adding the necessary extra plant to enable them to turn out steel shell jackets for the British Government.



# Railway Mechanical Methods and Devices.

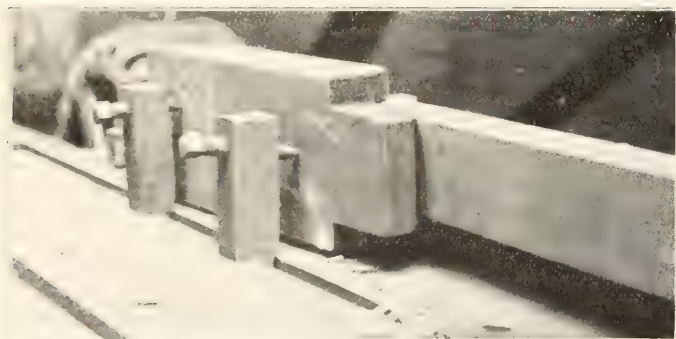
## A Handy Planer Stop.

A handy stop for the planer, in use in the Toronto, Hamilton and Buffalo Ry. shops, Hamilton, Ont., is shown in the accompanying illustration. The planer has the usual T slots the length of the table, with round stop holes in rows between. In these holes pins can be fitted, with set screws through the upper end for bearing against the work.



Planer Table Stop to Fit in the T Slots.

As the holes are some distance apart, it frequently happened that intermediate blocking was required to hold the work being planed. The result of this disadvantage was the introduction of the stop, shown herewith, which fits in the table slot, intermediate to the ordinary stop holes. The upper portion is the same as the usual pin stop. We are indebted to E. Glavin, Foreman, Machine Shop, for this information.



Jig on Planer for Planing Outside Faces of Shoes and Wedges.

## Planing Shoes and Wedges.

A method of machining shoes and wedges on the planer with a minimum of time required in setting up the work has been developed in the Toronto, Hamilton, and Buffalo Ry. shops, Hamilton, Ont. In the first stage of the machining they are laid in a row on the planer table, and the inner faces planed out, the locating of the shoes and wedges for this operation not requiring a great deal of accuracy, as there are no finished surfaces up to this stage. The next operation consists of planing the sides of the shoes and wedges, an operation that is performed in the manner shown in the accompanying illustration.

Bolted to the planer table there is a casting, roughly of a base and upright form, the upright section being finished on the outer face to the inside dimensions of the shoe or wedge. Against this face the inside finished

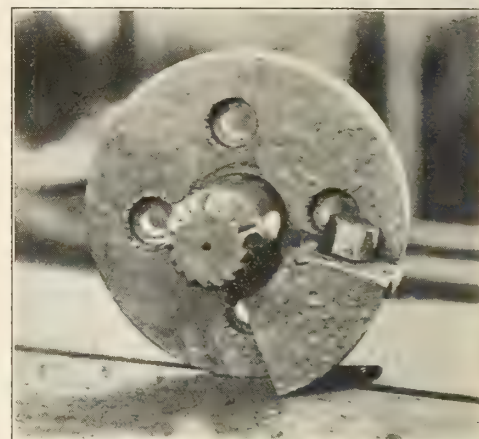
face of shoe or wedge is placed and held in position by planer stops and set screws, and in this position one face of the shoe or wedge is finished. Reversing the position, the other face is finished. Both these operations can be performed on several shoes or wedges at a setting.

For the final operation of finishing the backs of the shoes or wedges such a jig cannot be used, as, due to the inequality in wear on the mating faces of the shoes and wedges, where they are used in repair work, as in this shop, it is necessary to lay out lines on the ends of the shoes and wedges to which to plane. We are indebted to E. Glavin, foreman machine shop, for this information.

## Calipering Driving Wheel Boxes.

In the Toronto, Hamilton, and Buffalo Ry. shops, Hamilton, Ont., for the purpose of calipering the inside diameter of driving wheel boxes, there is in use a most excellent method, which is in many ways superior to anything the writer has seen in use elsewhere. Good as it is, a still better method is being developed which will supersede the first, more on account of speed than want of accuracy. As the crown bearing of the driving wheel box is only a half circle it is impossible to caliper in the inside diameter while boring in the boring mill, the method followed in these shops. In some shops it is considered better practice to slot the inside diameter, instead of boring, but the boring appears to have certain advantages. The method followed in these shops is as follows: After setting up the work on the boring mill table, and centring, the boring tool is set as closely as possible by judgment, to bore the correct diameter. The tool is then fed down into the work just far enough to present a

calipering shoulder is cut in the box the table is swung around until the tool is opposite the flat head of the bolt, the latter being adjusted until it just touches the tool. This gives the other side of the boring diameter, which can thus be calipered, the crown of the box as one side of the diameter and the flat head of the bolt as the other side. The tool can be adjusted after this preliminary calipering until finally correct, when the calipering jig may be removed. In the above method plain



Chamfering Tool for Safe Ends.

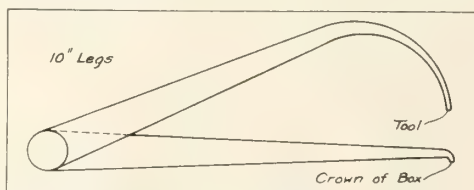
inside calipers are employed.

In the method now being introduced the calipering frame is eliminated, and instead an unusual pair of calipers of the shape shown in the accompanying illustration is used. After passing through the preliminary calipering shoulder, cut as in the previous instance, the table is swung around so that the tool is opposite the crown. Placing the tip of the straight caliper leg on the tip of the tool



Calipering Driving Wheel Boxes, Old Method.

calipering shoulder. In the open side of the box there is fitted a special calipering jig. This latter consists of an open frame of the shape shown herewith, and which is a forged member. This frame is held in po-



Calipering Driving Wheel Boxes, New Method.

sition in the box opening by two set screws on each side, bearing against the box walls. In the centre of the frame there is a flat head bolt, the head projecting inwards towards the tool, and the outer end carrying a lock nut. After the

gives the diameter to which the tool is set, from which an adjustment of the tool may be speedily made if found necessary. These two methods have been developed under E. Glavin, foreman machine shop.

## Chamfering Tool for Safe Ends.

In the Toronto, Hamilton, and Buffalo Ry. shops, at Hamilton, Ont., a very handy method of chamfering the tube pieces that are used in safe ending is in use. Its advantage lies largely in the fact that the tool can be used in the bolt machine without much special fitting. The tool consists of a steel disc, which can be secured by four cap screws to the head of a bolt machine. Concentric in this disc there is a pin of the same inside diameter as the tube, the outer end of which is fluted like a reamer, for removing inside burrs in the tubes. On one side of the pin there is a radial projection, to one



face of which there is attached a shaving tool, the edge of which at the face of the supporting disc, touches the centre pin, tapering outwards to the other end, which is out a depth equal to the tube wall thickness. The tube safe end piece, held in the bolt machine vise, is forced over the centre pin, and on the shaving tool, which chamfers the edge as desired. We are indebted to E. Glavin, foreman machine shop, for this information.

### Drilling Speeds.

In a machine shop there are always a number of mechanics who have drilling to do but who possess little or no idea of the proper speeds to employ. In many cases it depends entirely upon the operator's judgment whether or not the machine is run at the highest speed that is consistent with good work. If the mechanic's judgment is poor—mere guesswork—a satisfactory rate of production combined with good work cannot be reasonably expected. When such a mechanic is given a table of drilling speeds expressed in revolutions per minute, it frequently happens that he does not know how to use it, and the average foreman does not have much time to explain details of this kind. A table of the form given herewith represents a simple means of conveying the required information in regard to suitable drill speeds. It can be made on tracing cloth so that blueprints may be made from time to time. These prints should be pasted

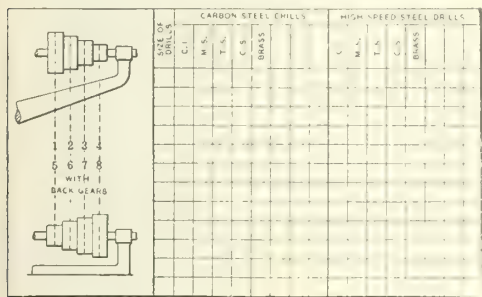


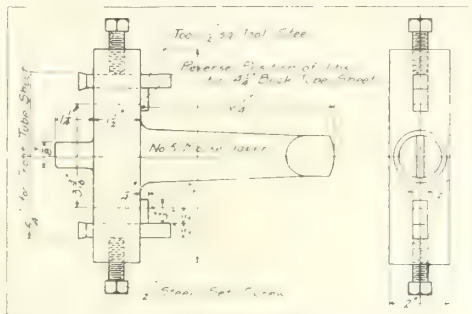
Diagram and Table of Drilling Speeds.

on a piece of board and given a coat of shellac or varnish to keep them clean. They can be hung near the drilling machines for ready reference.

The diagram at the left of the table shows the belt positions with and without the back gears, these positions being numbered 1, 2, 3 and 4 for the direct drive, and 5, 6, 7 and 8 when the drive is through the back gears. It will be obvious that each one of these belt positions corresponds to a certain number of revolutions per minute of the drill spindle. By calculation or from data taken from a machinists' handbook, the table at the right hand side may be filled in with the numbers of the belt positions, giving the speeds nearest the correct ones. With this the mechanic only has to know the size and kind of drill he is using and material he is drilling, in order to determine the correct drilling speed to employ. The preceding information refers to the application of a table of this sort to drilling machines, but similar tables could be compiled for lathes, milling machines, boring mills and any other machines that make use of cone pulleys and back gears to provide the necessary speed variations. The table could be made to include the proper feed to employ with each speed and material, but great care must be used or the entire object of the scheme will be lost. The average machinist has difficulty in using any but the simplest of tables, and his judgment in regard to the feeds is generally more accurate than his ideas of the correct cutting speeds.—Machinery, New York.

### Superheater Tube Sheet Borer on Canadian Northern Railway.

The Canadian Northern Ry. has adopted as standard the tube sheet boring tool, shown in the accompanying illustration. It consists of a cross bar of steel, on the upper face of which there is a no. 5 Morse taper

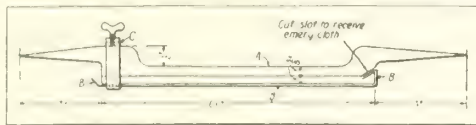


Superheater Tube Sheet Borer.

shank, and concentric with it on the other side, a  $\frac{3}{8}$  x  $1\frac{1}{4}$  in. guiding tip. Through the cross bar there are two rectangular holes, of a size to take a cutting tool and key, and held in position by  $\frac{1}{2}$  in. steel set screws. The keys are collared on the upper end, to prevent them from falling through while adjusting. This key feature makes it possible to use the same tool for both tube sheets, the larger holes being cut with the keys inside the cutting tools, and the smaller holes with the positions of the cutting tools and keys reversed. The tube sheet is laid out for all the holes, which are drilled 15-16 in. diam. These holes form guides for the tool tip, which has a 1-16 in. working clearance. The cutter forms a hole  $\frac{1}{8}$  in. smaller in diameter than the finished size, this remaining  $\frac{1}{8}$  in. being finally reamed out the same as the usual practice with the smaller tubes.

### A Substitute for Files for Triple Valve Work.

When triple valves have been in service for a considerable time and are removed from cars or locomotives to be cleaned and repaired, a good many of them have leaky slide valves, on account of elevations and depressions at the face of the slide valve and the slide seat, due to uneven wear between the two surfaces. When repairing them, it is necessary to first file the face of the slide valves as well as the slide valve seat perfectly straight before the work of grinding in the slide valve is commenced. Common, flat, smooth files are not suitable for this work, and it therefore has become



Device for Triple Valve Repair Work.

a practice in many shops to use special cut square files at an average cost of about \$1.50 each.

G. L. Van Doren, Superintendent of the Central Rd. of New Jersey shops at Elizabethport, N.J., has designed a simple device, as shown in the accompanying illustration, which does away with the expense of purchasing special files, and the results are in every way just as satisfactory as if the work had been done with a special file. A is a piece of T iron planed off on the under side to receive a strip of emery cloth of the proper width. The ends of the T iron are finished to receive a file handle.

B is a piece of emery cloth and C is a little clamp to hold the emery cloth stretched to the T iron. The expense of the emery cloth in comparison with a special file is insignificant. Special grades of emery cloth may be used. The device is useful for different kinds of jobs besides triple valves, such as slide valve feed valves, distributing valves, etc. F. J. Borer, Airbrake Foreman, Central Rd. of New Jersey, in Railway Master Mechanic.

### Spark Arresters for Locomotives Burning Non-Coking Coals.

The Board of Railway Commissioners issued the following circular, Jan. 25:—"During the past two years, numerous complaints have been received by the Board as to fire danger resulting from the use as locomotive fuel of certain classes of western coals. A careful investigation of this situation by the Board's officers reveals the fact that excessive sparking results from the use of such coals, and that, even when kept in perfect order, the spark arresting devices prescribed in regulation 2 of General Order 107 are inadequate to reduce within reasonable limits the number of live sparks thrown from the stack. The existence of this situation has been recognized by some of the western railways, which have voluntarily discontinued the use of such coals during the fire season.

"It appears from analyses made by the Mines Branch that the coals in question are not lignites, but that in each case where such trouble has occurred the coal has poor coking properties, or is non coking, while the use of coals which exhibit good coking properties results in only a normal amount of sparking. The Board does not desire to hamper in any way the legitimate development of any phase of the important industry of coal mining. It is, however, considered essential that some steps be taken to reduce to normal proportions the fire hazard resulting from the use of such coals as are above described. To meet this situation, the Board has under consideration the advisability of amending Regulation 2 of General Order 107 by adding thereto the following:

"(c) There shall be such special spark arresting device, other than the above, as may be approved by the Board, on every engine burning coal which has poor coking properties, or is non coking, the use of which, as locomotive fuel, is not prohibited by regulation 7 of this order."

"All parties interested are requested to submit their comments to the Board, in writing, not later than Feb. 20, 1915. If an order dealing with this matter is issued, it is expected that it will be made effective on and after April 1, 1915. In such event, arrangements will be made by the Board, upon application by any railway company concerned, for the prompt testing, jointly with the company, of any spark arresting device which it is claimed will meet the above conditions."

The Webster Construction Co. has been incorporated under the Ontario Companies Act, with offices at Hamilton, Ont., and an authorized capital of \$40,000, to build railways, canals, bridges, docks, wharves, roads, etc., and to carry on a general contracting business, and in connection therewith to take over the business heretofore carried on in Hamilton and London, Ont., by McKay, McKay and Webster. The provisional directors are, W. G. Webster, J. G. Smallman, Mrs. M. H. Smallman, Mrs. A. B. Webster, A. H. M. Graydon, London, Ont.

The restrictions in the area of the grate openings in locomotives are more generally found as due to failure to clean clinkers from between the bars than from faulty design.



## Canadian Northern Railway Company's Annual Report.

At the annual meeting in Toronto Feb. 1, the following directors were elected:—Sir William Mackenzie, President; Sir Donald Mann, Vice President; Z. A. Lash, Fred-eric Nicholls, R. M. Horne-Payne, R. J. Mac-kenzie, E. R. Wood and D. B. Hanna. All but Messrs. Wood and Hanna were members of the former board. E. R. Wood, as stated in the report, has been added to the board, and D. B. Hanna, who is Third Vice Presi- dent, has also been added.

The following directors' report, over the signature of Sir William Mackenzie, was submitted at the annual meeting:

The results of the operations for the fis- cal year ended June 30, 1914, are as follows:

GROSS EARNINGS.	
From Passenger traffic .....	\$ 3,719,946.94
From freight traffic .....	18,316,055.73
From express, mail, telegraph, in- terest and profits from elevators and other subsidiary companies, investments, etc. ....	1,745,326.17
	\$23,781,328.84
WORKING EXPENSES, (including taxes, etc. ....)	
	16,450,763.09
Net earnings .....	\$7,330,565.75
Deduct: fixed charges .....	5,776,060.34
Surplus .....	\$ 1,554,505.41
From this deduct interest at 5% per annum paid on income charge convertible debenture stock out- standing .....	1,250,000.00
Net surplus for the year .....	\$ 304,505.41

The gross earnings show a decrease, com- pared with the previous year, of \$496,149.63, or 02.04%. Whilst your directors regret that this year, for the first time in its his- tory, they have to report a decrease of gross earnings, it is gratifying, due to substantial economies effected in the operation of the various undertakings controlled, that the net earnings from all sources show an in- crease of \$556,697.85, or 08.22%, over the preceding year. The working expenses were 72.02% of the gross earnings of the railway proper, and including taxes 69.18% of the gross earnings from all sources, com- pared with 74.64% and 72.10% respectively in the previous year.

During the year 413 miles of newly con- structed track were added to the railway, the average mileage operated being 4,563 miles, compared with 4,297 the preceding year.

The land sales during the year were 3,692 acres for \$56,220.94, an average of \$15.23 an acre, compared with an average of \$15.36 for the preceding year. Land grant bonds of the issue of 1909, amounting to £122,600, were retired, leaving in respect of this issue outstanding £634,400. During the year £3,500,000 5% land mortgage debentures, repayable in or before 1923, have been created and £1,500,000 sold to public. Hav- ing regard to the fact that the National Trust Co. holds cash in its hands in excess of the amount required to retire the issue of 1899 land grant bonds, that the deferred payments when collected on the land actu- ally sold will retire the balance of the issue of 1909 and leave a surplus of over \$4,800, 000, that there are 857,356 acres of land still to sell, it will be seen that the redemp- tion of these 5% land mortgage debentures in due course is amply provided for. In addition to the equities referred to above and the unsold lands, there has also been assigned to the trustees of these debentures as additional security \$10,000,000 of shares and \$10,000,000 4½% debenture stock of the Canadian Northern Town Properties Co. In addition to the issue of 5% land mortgage debentures, short term issues of secured notes and temporary loans were made at different times during the year, the pro- ceeds of which have been or will be applied

to construction and betterment of the sys- tem generally. There have also been cre- ated during the year, under conditions here- inafter explained, \$45,000,000 of 4% debenture stock guaranteed unconditionally by the Dominion of Canada; this \$45,000,000 under ranks for security the existing issues of bonds and debenture stocks, including the 5% convertible income debenture stock. Car trust obligations were created to the extent of \$8,126,596.14, for the purchase of locomotives and passenger and freight cars of different kinds. During the year \$5,604, 596.14 was repaid in respect of previous obligations, thus making a net increase on this account for the year of \$2,522,000.

As a result of the satisfactory grain crop of 1913 in Manitoba, Saskatchewan and Alberta, your company handled not less than 80,000,000 bush. of grain, or its equiva- lent in flour and other mill products. The gross revenue, therefore, for the first half year under review, showed a very sub- stantial increase over the same period of the preceding year, and it was confidently felt because of this fact that, although there had been a perceptible slowing down of business generally throughout the Domin- ion, the expected falling off of traffic re- cepts for the succeeding six months would not approximate the increased revenues for the first half of the year. Notwithstanding the unexpected heavier loss in gross re- cepts, there are favorable features in cer- tain classes of traffic handled which, with a return of business to normal conditions, must be of substantial advantage to your company in the future. At several points on the system, the mining of coal is being carried on with success. During the past year your company handled over 1,100,000 tons of commercial coal, in addition to which an average of 700 tons a day have been purchased from mines served by our own lines and used in the operation of our trains. Reference should also be made to an increase of 150,000 head of live stock over the preceding year. The increase is on account of the development of this in- dustry in Saskatchewan and Alberta, which assures to the farmer a steady and regular income, quite apart from the profits in the growing of grain, and ensures to your com- pany the movement of profitable traffic at all times of the year. The development of these features is the natural outcome of the policy which has been consistently followed by your company, and also to the fact that its lines have been constructed in territory particularly adapted to mixed farming.

During the year an important revision of the main line between Winnipeg and Port Arthur, across Rainy Lake, was completed. The revision is over 2½ miles long and re- places a part of the original line, which was largely on timber trestles, by permanent work, at the same time reducing the gradi- ent to a maximum of 4-10 of 1%. The new line is built for double track and is laid with 80 lb. steel rails. The work includes some heavy excavation, a rock embankment over 1½ miles long and from 20 to 70 ft. in height above the bottom of the lake, and two permanent steel and concrete bridges, one of them a bascule lift bridge over the navigation channel. In addition to this other betterment work, representing large expenditures, was done over the entire sys- tem, which has so increased the efficiency of the service that the need for further ex- penditure in that regard may with safety be delayed until a return of normal business conditions.

As you are aware, the object of the board has been to secure a transcontinental rail- way system across Canada, and with that object the ownership or control of a num-

ber of independent companies was secured. The lines of some of these railways are so located that, being joined with your com- pany's main line, they constitute a through and very direct route connecting Quebec, Montreal, Ottawa, Toronto, Winnipeg, Ed- monton and Vancouver and Victoria by car ferry. The lines of the other companies constitute valuable branch lines and feeders. The problem of financing the completion of this main through line, and the develop- ment and betterment of this system gener- ally, had to be solved. It did not seem prac- ticable or desirable to continue as hereto- fore and complete the system while many of the separate or subsidiary companies constituting it remained in law, corpora- tions independent of the C.N.R. company. Your directors, after careful consideration, decided that the time had arrived for the formal acquisition by your company of the control of the entire system and for the raising of money on the security of the general system, in order that the main through line might be completed and the construction, equipment and betterment of the works and undertakings of the system generally might be provided for. Owing to the public nature and importance to the people of Canada of the C.N.R. system, and that in the public interest it should be com- pleted without delay, your directors ex- plained to the Dominion Government their intentions with respect to the consolidation and completion of the system, and applied for a Dominion Government guarantee of securities to the extent of \$45,000,000, se- cured by a general charge upon the under- takings of the C.N.R. and upon the stocks of the subsidiary companies. The applica- tion having been favorably entertained by the Government, and the statute having been passed by Parliament, an agreement between the Government and the company was made and the control of the shares in the capital stocks of the subsidiary com- panies which had not previously been ac- quired by the C.N.R. Co. was transferred to it. The statute authorizes any railway com- pany comprised in the Canadian Northern system to enter into arrangements and agreements with the Canadian Northern respecting the operation by the C.N.R. of its undertaking. This provision will greatly facilitate the consolidation of the system, and your directors intend to take advantage of it, so that, as far as possible, the whole system may be operated directly by the C.N.R. Co., and that a single or consolidated yearly balance sheet may be prepared. By the statute the capital stock of the C.N.R. is fixed at \$100,000,000, subject to increase only by the Dominion Parliament; provided that for the purpose of exchange of income charge convertible debenture stock, \$25, 000,000 of which is now outstanding, there may be issued to such holders who exercise the option of exchange, the amount of cap- ital stock over and above the \$100,000,000 required for the purpose. The statute also provides that no further issue of income charge convertible debenture stock shall be made under the trust deed securing the same. No shares in the capital stocks in the subsidiary companies beyond the amounts heretofore issued can be issued without the consent of the Government. As part of the terms upon which the Gov- ernment guarantee was authorized, the statute required that there should be trans- ferred to the Dominion of Canada \$33,000,000 par value of the C.N.R. Co.'s capital stock, in addition to the \$7,000,000 which was issued under the authority of the statute of 1913. The shareholders furnished this amount, and the Government is now a share- holder to the extent of \$40,000,000, out of a total of \$100,000,000 of stock. The pro- visions of the statute relating to the guar- antee of the \$45,000,000 were all complied



with, and the issue of the guaranteed securities was duly authorized and secured by trust mortgage. These having been completed subsequent to the close of the fiscal year, the effect of the arrangement does not appear in the present statement of accounts.

Since the close of the fiscal year, business conditions have become exceedingly bad, owing to the war now in progress. Every industry has been affected to a greater or less extent, and this is reflected, so far as all the railways in the Dominion are concerned, in reduced gross revenue from week to week, especially in the Prairie Provinces. To meet these unparalleled conditions your directors have enforced sweeping economies in the handling of such business as is being offered as will in a measure offset the serious loss in gross revenue.

Owing to conditions which have arisen, the completion of your line across Canada has been delayed. It is expected, however, that a physical connection between the east and the west will be made early in the coming year, and that a regular through service will be in full operation by midsummer of 1915.

E. R. Wood, Toronto, President, Dominion Securities Corporation, and identified with other important financial interests, has been elected a member of your company's board.

The accounts and statistical tables appended were submitted by D. B. Hanna, Third Vice President:

#### CONDENSED BALANCE SHEET.

##### Assets.

Cost of railway and equipment	\$239,688,998.27	
Acquired securities (cost)	17,309,634.77	
Advances to other companies	9,310,721.28	
Advances to lines under construction	15,226,978.49	
Value of material and supplies on hand	\$2,817,971.51	
Due from agents, station balances, etc.	714,291.16	3,532,262.67
Deferred payments and accrued interest on land sales	7,161,785.46	
Cash with National Trust Co., account of land sales	2,730,962.75	9,892,748.21
Cash account—		
With Dominion Government	757,513.29	
With Province of Manitoba	656,713.38	
With Province of Saskatchewan	2,803,617.04	
With Province of Alberta	1,148,959.85	
Cash on hand	2,841,477.90	8,208,281.46

\$303,169,625.15

In addition to the above assets the company owns 867,356 acres of land in Manitoba and Saskatchewan.

##### Liabilities.

Capital stock	\$77,000,000.00	
Bonds and stock (guaranteed by Government)	54,915,117.86	
4% perpetual consolidated debenture stock	46,464,715.83	
5% income charge convertible debenture stock	25,000,000.00	
6% one year gold notes	\$3,500,000.00	
5% secured notes	11,923,333.34	15,423,333.34
5% land mortgage debentures	\$7,300,000.00	
Land grant bonds		
1899	\$2,000,000.00	
1909	3,087,413.35	
	5,087,413.35	12,387,413.35
Temporary loans against deposit as collateral of inter alia Government guaranteed securities, the value of which at current price largely exceeds the amount borrowed		14,968,487.19
Car trust obligations		22,023,500.00
Current liabilities—		
Unpaid pay rolls	1,147,874.01	
Unpaid audited vouchers	2,303,020.51	
Due to other companies	4,633,972.31	8,084,866.83
Coupons and dividend warrants due July (since paid)	1,784,639.31	

Accrued interest on bonds and equipment securities	631,984.71	2,416,624.02
Equipment replacement fund		694,403.25
Surplus—		
Land account	16,828,269.95	
Railway account	6,962,893.53	23,791,163.48
		\$303,169,625.15

#### INCOME ACCOUNT.

Operating expenses	\$16,147,417.08	
Taxes, railway	214,835.51	
Taxes on company's lands	88,510.50	
Interest on bonds, etc.—		
Consolidated debenture bonds, guaranteed by Manitoba	491,825.31	
Ontario Division debenture bonds, guaranteed by Manitoba	230,648.36	
Winnipeg Terminal bonds, guaranteed by Manitoba	120,000.00	
3% debenture stock, guaranteed by the Dominion	280,799.86	
3½% debenture stock, guaranteed by the Dominion	276,380.52	
4% debenture stock, guaranteed by Manitoba	114,399.91	
4% debenture stock, guaranteed by Saskatchewan	321,200.00	
4% debenture stock, guaranteed by Alberta	154,950.00	
Consolidated debenture stock	1,809,375.37	
Qu'Appelle, Long Lake and Saskatchewan Ry. 4% debenture stock	202,056.02	
Land grant 4% bonds	129,556.32	
5% land mortgage debentures	182,500.00	
5% secured notes	122,354.87	4,436,046.57
Rental of leased lines		
Northern Pacific & Manitoba Ry.	225,000.00	
Minnesota & Manitoba Rd.	26,460.00	251,460.00
Interest on equipment securities		1,088,553.77
Accrued interest to June 30, 1914	631,984.71	
Less accrued interest to June 30, 1913, paid during current year	511,988.18	119,996.53
Interest at 5% per annum paid on income charge convertible debenture stock outstanding		1,250,000.00
Balance of income account		6,962,893.53
		\$30,559,713.49

Balance of income account at June 30, 1913, as per annual report	\$6,778,384.65	
Gross earnings, passenger	\$3,719,946.94	
Freight	18,316,055.73	
Express, mail and miscellaneous	1,745,326.17	23,781,328.84
		\$30,559,713.49
Balance to credit of income account June 30, 1914		\$6,962,893.53

#### Gross Earnings.

Class	1914	Per cent.
Passenger	\$3,719,946.94	15.64
Freight	18,316,055.73	77.02
Mails	148,665.67	00.63
Express	485,108.94	02.04
Miscellaneous	1,111,551.56	04.67
Total	\$23,781,328.84	100.

#### Operating Expenses.

Class	1914	Per cent.
Maintenance of way and structures	\$3,191,895.11	19.40
Maintenance of equipment	2,563,233.05	15.58
Traffic expenses	450,413.67	02.74
Transportation expenses	9,198,610.26	55.92
General expenses	1,046,700.67	06.36
Total	\$16,450,763.09	100.

#### Summary of Earnings and Expenses.

Class	1914	Per cent.
Gross earnings	\$23,781,328.84	
Operating expenses	16,450,763.09	69.18
Net earnings	7,330,565.75	30.82

#### Description of Freight Carried.

	For years ended June 30, 1914.	1913.
Flour, sacks (100 lbs. ea.)	2,405,487	3,047,478
Grain, bushels	73,892,911	59,380,957

Live stock (all kinds), head	385,697	239,133
Logs and lumber, feet	466,745,000	448,351,000
Firewood, cords	209,712	233,248
Coal, tons	1,150,461	1,111,865
Immigrants' effects, cars	4,241	4,628
Building material (lime, stone, brick, sand, etc.) cars	41,952	57,367
Miscellaneous, tons	1,456,997	1,371,927

#### Passenger Traffic.

	1914.	1913.
Passengers carried (earning revenue)	2,010,272	1,984,978
Passengers carried one mile	158,216,177	157,225,910
Passengers carried one mile per mile of road.	34,674	36,590
Average distance carried	78.73	79.21
Total passenger revenue	\$3,591,054.32	3,590,313.39
Average amount received per passenger	1.78.64	1.80.87
Average amount received per passenger per mile	.02.270	.02.284
Total passenger train earnings	\$4,353,721.55	4,381,668.92
Passenger train earnings per train mile	\$1,22,702	1,28,088

#### Freight Traffic.

	1914.	1913.
Revenue tons carried	6,537,416	6,821,811
Revenue tons carried one mile	2,419,604,849	2,366,393,799
Revenue tons carried one mile per mile of road.	530,266	550,708
Average distance haul of one ton	370.12	346.88
Total freight revenue	\$18,125,874.76	18,261,130.13
Average amount received for each ton of freight	2.77.264	2.67.687
Average revenue per ton per mile	.00.749	.00.772
Total freight train earnings	\$18,316,055.73	18,561,026.90
Freight train earnings per train mile	\$2,95,153	2,83,210

#### Passenger and Freight, Etc.

	1914.	1913.
Gross earnings per mile of road	\$5,211.77	5,649.87
Operating expenses per mile of road	\$3,605.25	4,073.45
Net earnings per mile of road	\$1,606.52	1,576.42
Amount required per mile of road to pay fixed charges, including leased lines	\$1,027.29	993.01

#### Train Mileage.

	1914.	1913.
Mileage of passenger trains	3,548,219	3,420,821
Mileage of freight trains	6,205,620	6,553,100

#### Expenses Per Traffic Train Mile.

	1914.	1913.
Maintenance of way and structures	cts. 32.72	32.33
Maintenance of equipment	cts. 26.28	33.10
Traffic expenses	cts. 04.62	04.29
Transportation expenses	cts. 94.31	97.26
General expenses	cts. 10.73	08.51
Total	\$1.68.66	1.75.49

#### Summary of Equipment.

	June 30, 1914.	1913.
Locomotives	663	534
Sleeping and dining cars	80	76
Passenger coaches	412	376
Baggage and mail and express cars	112	115
Business cars	16	16
Freight, refrigerator and stock cars	27,018	23,759
Conductors' vans	433	396
Boarding, tool, auxiliary cars, steam shovels and snow equipment	818	701

The total mileage owned and operated, including leased lines, at June 30, 1914, was 4,965.90, located as follows: Ontario, 342.07; Manitoba, 1,836.70; Saskatchewan, 2,052.24; Alberta, 691.17; Minnesota, 43.72.

**Railways and Forestry.**—The Canadian Forestry Association passed a resolution at its annual meeting recently, thanking the railway companies for the assistance given the association in various ways in carrying on the work of forest conservation, and stating that without such aid the association's work would have been much curtailed.



## Application for a General Increase in Freight Rates.

The Canadian Freight Association, on behalf of all the railway companies under the Board of Railway Commissioners' jurisdiction, filed the following application with the Board, on Feb. 17:—

The companies propose to file with the Board tariffs bringing into effect increases in freight charges as shown in the schedule hereto attached.

In order to obviate the enormous expense of printing tariffs and filing same, prior to their consideration by the Board, the companies desire to submit a memorandum thereof, showing the increases proposed to be made effective, for the Board's approval. Copies of this application and of the schedule attached have been forwarded to the secretaries of the principal boards of trade and to the Canadian Manufacturers' Association.

In support of the application the applicants state that it is in the interest of the country at large, as well as of the companies and their shareholders, that further revenues should be obtained from the carriage of freight traffic.

That the rate of return in net operating income upon the companies' property investment has seriously declined.

That the principal cause of this decline is the steady and constant increases in operating expenses, due to matters of continuing character, such as wage increases, legislative requirements and the necessity of maintaining a higher standard of track equipment and facilities generally.

That the return upon money invested in railway facilities in the territory in respect of which increases in rates are asked, is unreasonably low and inadequate.

The effect of these factors is to seriously diminish the companies' borrowing powers and compel the obtaining of necessary capital at much higher rates of interest, thereby increasing fixed charges, which must be met out of the net earnings, which have been decreased, and will in all likelihood be further decreased, by the necessity of paying higher rates of interest on any monies borrowed.

That in consequence of the exceptional conditions at present existing, various money markets previously open to the companies are now closed, the result being to very materially limit the sources from which money may be obtained.

That among other grounds the companies will urge as a reason for the proposed increases the fact that after a full hearing the Interstate Commerce Commission made an order recently increasing the rates in the Official Classification territory to the South, notwithstanding the fact that in the applicants' opinion the conditions under which the companies were there operating were much more favorable than those which apply to the applicants.

The applicants propose to submit to the Board, on the hearing of the application, statistics to support the grounds upon which the application is based. These statistics are in course of preparation and will be filed with the Board before the date set for the hearing, if at all possible. At the same time copies will be forwarded to the secretaries of the boards of trade and other interests.

### Schedule of Increases Proposed.

To meet in some measure the conditions outlined in the foregoing application the following changes in various freight tariffs, class and commodity, are proposed:—

1. CLASS RATES.—That goods carried under Canadian Freight Classification ratings and class rates will be advanced 2c. per 100 lbs. 1st class, and 1c. per 100 lbs. 5th class; rates for other classes to be fig-

ured on the usual basis, subject to standard mileage class rates as a minimum.

2. COMMODITY RATES.—On freight traffic carried on commodity rates the following advances are proposed:—

Coal and coke, 10c. a ton. Sand, gravel and crushed stone (except stone for fluxing), 5c. a ton.

Billets, pig iron, wire rods, rails, crop ends, ferro silicon, iron ore concentrates, crude oxide of iron, mill cinder.

Where present rate is	Proposed advance
\$1.49 a ton or lower	5c
\$1.50 a ton to \$2.49	10c
\$2.50 a ton to \$3.49	15c
\$3.50 a ton to \$4.49	20c
\$4.50 a ton to \$5.49	25c
\$5.50 a ton to \$6.49	30c

Pulpwood, cordwood, paving blocks, logs, stone, artificial stone.

Where present rate is	Proposed advance.
7½c or lower	¼c
Over 7½c but not exceeding 12½c	½c
" 12½c but not exceeding 17½c	¾c
" 17½c but not exceeding 22½c	1c
" 22½c but not exceeding 27½c	1¼c

Alum, tan bark, stone dust, cooperage stock, gypsum rock, shafts, magnesite, final molasses, salt, drain tile, wire fencing, wrapping paper cores, china clay, beer packages, charcoal, nitre cake, hubs, spokes, mica scrap, pitch, salt cake, potatoes, wire netting, sulphur in packages, cement, petroleum coke, grinding pebbles, rims, lime, lumber and forest products, rags, slag, wrapping paper, woodpulp, articles of iron and steel manufacture, car lots.

Where present rate is	Proposed advance.
15c or lower	½c
Over 15c but not exceeding 25c	1c
" 25c but not exceeding 35c	1½c
" 35c but not exceeding 45c	2c

Wood alcohol, excelsior, petroleum, marble, tar, ale and beer, gas liquor, rice and rice flour, car loads, sludge, tin cans, glass bottles, granite, green hides, sulphur in bulk, metal shingles and siding.

Where present rate is	Proposed advance.
25c or lower	1c
Over 25c but not exceeding 35c	1½c
" 35c but not exceeding 45c	2c

Grain and grain products, flax seed, beans.

Where present rate is	Proposed advance.
7½c or lower	½c
Over 7½c but not exceeding 12½c	1c
" 12½c but not exceeding 17½c	1½c
" 17½c	2c

3. Rates on grain and grain products from Fort William, all rail and lake and rail; also from Bay ports to Montreal, will be advanced 1c. per 100 lbs. Rates from Fort William and Bay ports, and Ontario points to points in the Maritime Provinces, will be advanced 1c. per 100 lbs., plus the difference in the present and proposed arbitraries east of Montreal.

4. Sewer pipe as follows, viz:—Where present rate is 7½c. or lower, 1c. per 100 lbs. Where present rate is over 7½c., 1½c. per 100 lbs.

5. In connection with iron and steel articles, it is proposed to advance the l.c.l. rates to the proposed 4th class rates.

6. Rates on binder twine from Welland, Ont., will be advanced from 1c. to 4c. per 100 lbs., to correspond with similar advances made from twine factory points in the United States.

7. Proposed advance in rates on canned goods. To Montreal and Ottawa 1½c. to 2½c. per 100 lbs., points in the Maritime Provinces being figured by adding established arbitraries to the Montreal rate.

8. Cheese.—Rates on this commodity to Montreal will be advanced 2c. per 100 lbs., but not higher than the 4th class rates, which basis already applies from a very large territory.

9. Proposed to advance the present rates on livestock from 1c. to 2c. per 100 lbs.; also corresponding advance is proposed in the rates on livestock to Buffalo, N.Y., and United States generally.

10. Proposed to advance rates on dry earth paints from Argalls, Champlain and Red Mill, Que., to the 10th class rates.

11. Proposed to advance rates on paper, starch and glucose, to correspond with the advance made in the 5th class rates.

12. It is proposed to place acids on the 7th class basis.

13. Some commodities such as confectionery, corn oil, cotton piece goods, stoneware, gin, lard compound, leather and soap will be advanced to Classification basis.

14. On certain commodities such as fertilizers, ore, stone for fluxing, sugar beets, beet pulp, etc., no advance has been proposed.

The above takes care of a great majority of the changes proposed. There are a few others of less importance which have been submitted to the Board in detail.

The Board has given notice that the application will be heard in Ottawa on March 1.

## Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those for 1913-14, from July 1, 1914:

	Gross Earnings	Expenses	Net Earnings	Increase or Decrease
July	\$1,594,300	\$1,163,800	\$430,500	x \$83,800
Aug.	1,367,700	1,123,000	244,700	x 163,900
Sept.	2,109,000	1,519,000	590,000	65,800
Oct.	1,895,300	1,332,100	563,200	x 440,900
Nov.	1,670,200	1,123,100	547,100	x 417,700
Dec.	1,329,100	908,000	421,100	200,900
	\$9,966,500	\$7,167,200	\$2,799,300	x \$1,241,400
Decr.	\$3,398,400	\$2,157,000	\$1,241,400	.....

x Decrease.

Approximate earnings for January, \$950,800, against \$1,570,900 for Jan., 1914; and for two weeks ended Feb. 14, \$499,200, against \$615,800 for same period 1913.

## Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1913-14, from July 1, 1914:

	Gross Earnings	Expenses	Net Earnings	Decrease
July	\$10,481,971.72	\$6,732,525.89	\$3,749,445.83	\$388,347.85
Aug.	8,917,764.38	6,554,616.62	2,363,147.76	597,981.54
Sept.	10,754,139.67	6,387,091.25	4,367,048.42	48,580.30
Oct.	9,282,928.49	5,361,600.13	3,921,328.36	2,281,529.45
Nov.	8,067,358.89	5,413,867.72	2,653,491.17	2,244,173.89
Dec.	7,443,962.43	5,244,438.62	2,199,523.81	2,127,297.90

	\$55,938,125.58	\$36,264,549.32	\$19,673,576.26	\$7,537,860.41
Dec.	\$19,348,036.45	\$11,810,176.04	\$7,537,860.41	.....

Approximate earnings for Jan., \$5,903,000, against \$7,719,000 for Jan., 1914; and for two weeks ended Feb. 14, \$3,074,000, against \$3,485,000 for same period 1913.

## Grand Trunk Railway Earnings, Etc.

The following figures show the earnings of the G.T.R., G.T.W.R., and D.G.H. & M.R. for January, compared with Jan., 1914:—

	1915	1914	Incr.	Decr.
G.T.R.	\$2,661,080	\$3,028,783	.....	\$ 367,703
G.T.W.R.	559,638	555,434	\$4,204	.....
D.G.H. & M.R.	192,131	190,295	1,836	.....
Totals	\$3,413,149	\$3,769,512	.....	\$ 356,363

Approximate earnings for two weeks ended Feb. 14, \$1,603,413, against \$1,741,770 for same period, 1914.

## Grand Trunk Pacific Railway Earnings.

The approximate earnings of the Prairie Section and Lake Superior Branch, 1,104 miles, for January were \$247,011, against \$368,318 for Jan., 1914.



## Birthdays of Transportation Men in March.

Many happy returns of the day to:—

W. G. Annable, General Passenger Agent, C.P.R. Atlantic Steamship Lines, Montreal, born at Ottawa, Mar. 3, 1875.

John Archibald, Locomotive Foreman, C.P.R., Coquitlam, B.C., born at Edinburgh, Scotland, Mar. 13, 1872.

C. H. Bowes, Assistant General Passenger Agent, C.P.R., Vancouver, B.C., born at Bangor, Me., Mar. 22, 1877.

George Bury, Vice President, C.P.R., Montreal, born there, Mar. 6, 1866.

Allan Cameron, Superintendent, Land Branch, Department of Natural Resources, C.P.R., Calgary, Alta., born near Owen Sound, Ont., Mar. 14, 1864.

F. G. J. Comeau, General Freight Agent, Dominion Atlantic Ry., Halifax, N.S., born at Meteghan River, N.S., Mar. 10, 1859.

W. A. Cooper, Manager, Sleeping, Dining and Parlor Cars and News Service, C.P.R., Montreal, born there, Mar. 22, 1871.

A. E. Cox, General Storekeeper, Canadian Northern Ry., Winnipeg, born at Huddersfield, Eng., Mar. 12, 1863.

Hon. N. Curry, President, Canadian Car and Foundry Co., Montreal, born in King's county, N.S., Mar. 26, 1851.

C. T. Delamere, Assistant Engineer of Construction, C.P.R., Montreal, born at Brainerd, Minn., Mar. 18, 1881.

Patrick Dubee, Secretary-Treasurer, Montreal Tramways Co., Montreal, born there, Mar. 4, 1876.

Frederick Elliott, President, Victoria Navigation Co., Ltd., Thurso, Que., born at Montreal, Mar. 8, 1858.

G. R. Fairhead, District Freight Agent, Canadian Northern Ry., Hamilton, Ont., born at Toronto, Mar. 6, 1882.

W. R. Fitzmaurice, Assistant Superintendent, Moncton and Ste. Flavie District, Intercolonial Ry., Newcastle, N.B., born at Bedford, N.S., Mar. 19, 1870.

C. Forrester, Superintendent, Stratford Division, Ontario Lines, G.T.R., Stratford, born at Wanstead, Ont., Mar. 5, 1876.

Jas. D. Fraser, Director and Secretary-Treasurer, Ottawa Electric Ry., Ottawa, Ont., and Vice President, Canadian Electric Railway Association, born at St. Andrews, Que., Mar. 26, 1851.

H. M. Gain, Trainmaster, Districts 6 and 7, Belleville Division, Eastern Lines, G.T.R., Belleville, Ont., born at Lindsay, Ont., Mar. 21, 1879.

R. A. Gamble, General Yardmaster, Winnipeg Terminals, C.P.R., born at Dublin, Ireland, Mar. 1, 1876.

E. P. Goodwin, ex Inspecting Engineer, National Transcontinental Ry., Baie Verte, N.B., born there, Mar. 17, 1865.

J. Halstead, Division Freight Agent, C.P.R., Calgary, Alta., born at Bracebridge, Ont., Mar. 2, 1877.

R. M. Hannaford, M. Can. Soc. C.E., Assistant Chief Engineer, Montreal Tramways Co., Montreal, born there, Mar. 22, 1865.

C. A. Hayes, General Traffic Manager, Canadian Government Railways, Moncton, N.B., born at West Springfield, Mass., Mar. 10, 1865.

H. T. Hazen, M. Can. Soc. C.E., Mackenzie, Mann & Co., Toronto, born at Truro, N.S., Mar. 14, 1870.

Joseph Hobson, M. Can. Soc. C.E., Consulting Engineer, G.T.R., Hamilton, Ont., born at Guelph, Ont., Mar. 1834.

J. I. Hobson, Treasurer, Canada Steamship Lines, Ltd., Montreal, born at Guelph, Ont., Mar. 30, 1872.

N. J. Holden, President, The Holden Co., Ltd., Montreal, born at Nobleton, Ont., Mar. 22, 1866.

A. R. Holtby, Master of Bridges and Buildings, Mountain Division, Grand Trunk

Pacific Ry., Prince Rupert, B.C., born at Rawdon, Que., Mar. 23, 1859.

Frank Lee, M. Can. Soc. C.E., Principal Assistant Engineer, C.P.R., Winnipeg, born at Chicago, Ill., Mar. 7, 1873.

A. K. Leighs, Car Foreman, G. T. Pacific Ry., McBride, B.C., born in Great Britain, Mar. 6, 1883.

R. W. Long, Division Freight Agent, G. T. R., Hamilton, Ont., born at Appin, Ont., Mar. 20, 1873.

T. W. Lowe, General Boiler Inspector, Western Lines, C.P.R., Winnipeg, born at Montreal, Mar. 30, 1858.

J. M. McKay, Superintendent, District 1, British Columbia Division, C.P.R., Revelstoke, born at Tiverton, Ont., Mar. 13, 1868.

Owen McKay, M. Can. Soc. C.E., Chief Engineer, Essex Terminal Ry., Walkerville, Ont., born in Ross tp., Renfrew co., Ont., Mar. 13, 1848.

M. Magill, Superintendent of Car Service and Telegraphs, Central Vermont Ry., St. Albans, Vt., born at Planks Point, N.Y., Mar. 24, 1852.

Sir Donald D. Mann, Vice President, Mackenzie, Mann & Co., Ltd., and Vice President Canadian Northern Ry., Toronto, born at Acton, Ont., Mar. 23, 1853.

H. H. Melanson, General Passenger Agent, Canadian Government Railways, Moncton, N.B., born at Scadouc, N.B., Mar. 9, 1872.

T. Milne, Locomotive Foreman, C.P.R., Windsor, Ont., born at Arbroath, Scotland, Mar. 3, 1856.

J. V. Murphy, General Agent, C.P.R., Portland, Ore., born at Bowmanville, Ont., Mar. 5, 1885.

Peter Paton, Purchasing Agent, Canada Steamship Lines, Ltd., Montreal, born at New Lowell, Ont., Mar. 13, 1869.

R. Patterson, Master Mechanic, G.T.R., Stratford, Ont., born at Brantford, Ont., Mar. 13, 1860.

F. W. Peters, General Superintendent, British Columbia Division, C.P.R., Vancouver, born at St. John, N.B., Mar. 25, 1860.

J. W. Pugsley, Secretary, Department of Railways and Canals, Ottawa, Ont., born at Amherst, N.S., Mar. 12, 1861.

E. H. Sewell, City Passenger Agent, C. P. R., Sherbrooke, Que., born at Quebec, Mar. 17, 1875.

W. Y. Soper, Vice President, Ottawa Electric Ry. Co., Ottawa, Ont., born at Oldtown, Me., Mar. 9, 1854.

E. F. L. Sturdee, Assistant District Passenger Agent, C.P.R., Toronto, born at St. John, N.B., Mar. 29, 1876.

G. W. Vaux, General Agent, Passenger Department, Union Pacific Rd., Chicago, born at Montreal, Mar. 21, 1866.

A. T. Weldon, Assistant General Freight Agent, Canadian Government Railways, Moncton, N.B., born at Dorchester, N.B., Mar. 6, 1876.

D. O. Wood, General Freight Agent for Ontario, Allan Line Steamship Co., Toronto, born at Kleinburg, Ont., Mar. 16, 1864.

H. K. York, Car Foreman, C.P.R., North Transcona, Man., born at Victoria Corner, Carleton co., N.B., Mar. 20, 1881.

**Railway Lands Patented.**—Letters patent were issued during December, in respect of Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:—

	Acres.
Calgary and Edmonton Ry. ....	481.00
Canadian Northern Ry. ....	312.00
Canadian Pacific Ry. ....	49.86
G.T. Pacific Branch Lines Co. ....	159.84
Qu'Appelle, Long Lake and Saskatchewan Rd. and Steamboat Co. ....	5,561.60
Total .....	6,565.69

## Spark Arresters for Locomotives Using Non-coking Coals.

With reference to the Board of Railway Commissioners' circular, published on pg. 87 of this issue we are officially advised that the Board's present standard of spark arresting device, which is  $2\frac{1}{2} \times 2\frac{1}{2}$  of no. 10 Birmingham wire gauge, has been found not to give satisfactory results with certain non coking western coals. The object of the proposed modification of the board's order is to induce the various railway companies, which desire to use non coking or poorly coking coals, to conduct experiments and develop spark arresting devices which will enable these coals to be used without excessive sparking. This is practically a new proposition, and the officials are not aware of any spark arresting devices which have been tested with these coals and found to give satisfactory results from the point of view of sparking and steaming capacity.

The Canadian Coal and Coke Co., of which H. A. Lovett, of Montreal, is President, has for some months been conducting experiments in co-operation with the Grand Trunk Pacific Ry. However, on account of the accidental death of O. M. Terry, who was conducting the experiments, the work was temporarily discontinued in December, but has again been taken up by Mr. McConachie, who has been loaned by the G. T. P. R. for the work. The Canadian Coal and Coke Co. owns the Pacific Pass mine at Lovett, Alberta. Pacific Pass coal is one of several non coking or poorly coking western coals with which there has been difficulty due to excessive sparking. Some two years ago, the G. T. P. R. voluntarily discontinued the use of these coals during the summer, on account of fire danger. The object of the Canadian Coal and Coke Co. in carrying on these experiments is, of course, to develop the summer railway market.

In connection with the circular above referred to, the board has no particular spark arresting device in mind, and it has not been shown that any of the spark arresting devices on the market will meet the particular conditions in question. It is hoped that by co-operation between the railway companies and the coal companies concerned, some method may be found which will enable these poorly or non coking coals to be used during summer with a reasonable degree of safety. The proposition is not to prohibit the use of these coals, but simply to require some definite kind of spark arresting device in connection with them, the details of such device to be developed experimentally and the results checked by the board's inspectors. The coal companies in question have already to a very considerable extent lost their summer railway market, and the idea is to develop some plan, if possible, by which this market may be regained. In this work the board's operating and fire inspection departments are co-operating as fully as possible.

**Vancouver Elevator.**—It is announced that active construction of the Government elevator at Vancouver will be commenced in April, and everything rushed so that the elevator will be ready for operation in the autumn. Preliminary work is in progress on the site, and the contractors, Barnett and McQueen Co., are organizing their plant. The total storage capacity of the elevator will be 1,250,000 bush., and the sacking plant will be able to deal with from 2,000 to 4,000 sacks an hour. Grain in bulk will be discharged at the rate of 60,000 bush. an hour, and grain will be taken into the elevator at the rate of about 30,000 bush. an hour.



### Passenger Rate Meetings at Toronto.

The annual meetings of the International Water Lines Passenger Association, the Niagara Frontier Summer Rate Committee and the Great Lakes and St. Lawrence River Rate Committee were held at Toronto in January. The rate representatives met on Jan. 26 and 27, and prepared the rates for submission to the general meetings of the three associations, at which they were confirmed without alteration.

At the Niagara Frontier Summer Rate Committee's meeting, Jan. 28, the chairman, F. T. Grant, G.P.A., Rutland Rd., Rutland, Vt., stated that the meeting had been called for the purpose of compiling for the information of interested lines, summer fares from Niagara Falls, Toronto, Montreal, Quebec, Detroit, Port Huron, Boston and miscellaneous points for season of 1915.

Mr. Grant was presented with a gavel, the head of which was made of marble from a mine under the Rutland Rd.'s right of way at North Rutland, Vt., and the handle of rosewood taken from the last wooden car used on that company's line.

R. L. Fairbairn, G.P.A., Eastern Lines, Canadian Northern Ry., was elected chairman for this year, and presided over the remainder of the meeting. The Erie Rd. was readmitted to membership.

The fares, as compiled by the rate representatives, were adopted, and it was understood that summer excursion tickets would be on sale May 1 to Oct. 15, and bear final limit of Oct. 31, inclusive, except where otherwise stated.

It was decided that the proceedings be issued by the Secretary for the information of interested lines, which are to understand that the publication is not a tariff or substitute for one, and consequently will not be accepted by the Board of Railway Commissioners for Canada, the Interstate Commerce Commission, or the New York State Public Service Commission as a legal tariff covering the fares shown therein.

The Secretary was instructed to compile and issue a Division Book, which will show divisions of all fares shown in the Niagara Frontier Summer Rate Sheet by all routes interested in same. The expense of compiling and issuing the summer rate sheet and division book, including Secretary's salary, will be assessed on the basis of mileage of each line over which fares are quoted in the sheet.

At the Great Lakes and St. Lawrence River Rate Committee's meeting, Jan. 28, W. F. Herman, G.P.A., Cleveland and Buffalo Transit Co., presided until the election of J. F. Pierce, G.P.A., Canada Steamship Lines, Ltd., as chairman for this year. The Indiana Transportation Co., Chicago, was admitted to membership.

The representatives of the various steamer lines were invited to announce their fares for the season of 1915, which the Secretary was instructed to embody in the proceedings.

James Morrison, A.G.P.A., Eastern Lines, Canadian Northern Ry., Montreal, is permanent Secretary of the Niagara Frontier Summer Rate Committee and the Great Lakes and St. Lawrence River Rate Committee.

The next annual meeting of the three associations will be held in Buffalo, N.Y., in January, 1916.

The International Water Lines Passenger Association met Jan. 27, the President, O. H. Taylor, P.T.M., Eastern Steamship Corporation, New York, in the chair. He was presented, on behalf of the Chicago, Duluth & Georgian Bay Transit Co., with a gavel made from wood used in the construction of the s.s. South American for that company, and which was placed on the Chicago-Duluth route in June, 1914.

The following lines were admitted to membership:—Great Northern Pacific S. S. Co., Indiana Transportation Co., United Fruit S. S. Co., Victoria Navigation Co., Ltd.

The subjects listed for discussion were dealt with and officers for the current year were elected as follows:—President, W. P. Hinton, A.P.T.M., Grand Trunk Pacific S. S. Co., Montreal; Vice President, F. B. Hibbard, G.P.A., Hudson River Day Line, New York; Secretary, M. R. Nelson, C.C.G.P.D., Northern Steamship Co., New York; Executive Committee—P. Robbins, G.P.A., Goodrich Transit Co., Chicago, Ill., 2 years; H. H. Cudworth, G.P.A., Eastern Steamship Corp., Boston, Mass., 1 year; E. W. Holton, G.P.A., Northern Navigation Co., Sarnia, Ont., 1 year.

### Special Dominion Taxation.

The Minister of Finance introduced a series of resolutions in the House of Commons, Feb. 11, to impose special taxation to meet deficiencies in revenue. The following are the principal items affecting transportation companies:

Every cable and telegraph company shall pay for Consolidated Revenue Fund 1 cent upon each dispatch or message originating at the offices of the company in Canada and transmitted thence over the company's lines for which a charge of 15 cts. or more was imposed, the company having the right to charge the 1c. to and collect the same from the person paying or liable to pay the regular charges for the transmission of the dispatch or message;

Every purchaser of a railway passenger ticket or right to transportation over a railway to any place in or outside of Canada, a steamboat passenger ticket or right to transportation by steamboat between ports or places in Canada or from a port or place in Canada to a port or place in Newfoundland, the West Indian Colonies or the United States, a ticket or right entitling the passenger to transportation over a railway and by steamboat to a port or place in Canada, Newfoundland, the West Indian Colonies or the United States, whether such transportation be by railway and steamboat or by steamboat and railway or by railway, steamboat and railway, shall pay for Consolidated Revenue Fund, in addition to the regular charge for the ticket or right, in respect of a ticket or right costing—over \$1 and not more than \$5—five cents, over \$5—for each \$5 and in addition for any fractional part of \$5—five cents;

Every purchaser of a berth in a sleeping car or seat in a parlor car shall, in addition to the regular charge for the berth or seat, pay for Consolidated Revenue Fund, 10 cts. in respect of each berth bought, 5 cts. in respect of each seat bought;

Every company carrying passengers by vessel from any port or place in Canada to any port or place outside of Canada, except Newfoundland, the West Indian Colonies and the United States, shall pay for Consolidated Revenue Fund in respect of each passenger carried—\$1, if the amount chargeable for the passage exceeds \$10; \$3 if the amount chargeable for the passage exceeds \$30; \$5 if the amount chargeable for the passage exceeds \$60, and the company may charge to the passenger and may collect from him the sum so payable;

No person shall issue a cheque at or by a bank and no person shall negotiate a bill of exchange through a bank or deliver a bill of exchange to a bank for collection unless he affixes thereto a stamp of the value of 2 cts.; a cheque or other bill of exchange made or drawn out of Canada in the possession of a bank in Canada shall before payment or pre-

sentment for payment have affixed thereto a stamp of the value of 2 cts., and the value of the stamp shall be chargeable to the person entitled to the proceeds of the cheque or bill; Every customer of a bank shall affix to a receipt for money paid to him by the bank and chargeable against a deposit to his credit in the bank a stamp of the value of 2 cts.;

Every express company carrying on business in Canada shall, before the issue of a money order or a traveller's cheque, affix thereto a stamp of the value of 2 cts. chargeable to the purchaser of the order or cheque or to the payee thereof;

No money order or postal note shall be issued under the provisions of the Post Office Act until there is affixed thereto a postage stamp of the value of 2 cts. and 1 ct. respectively, to be paid for by the purchaser of the order or postal note, and upon such stamp there may be printed or impressed the words "war tax";

On every letter and post card for transmission by post a tax of 1 ct. shall be levied and collected, such tax to be payable by affixing to the letter or card a postage stamp of that denomination, upon which there may be printed or impressed the words "war tax";

Every person by whom goods are received—to be exported or carried coastwise, or to be transported by railway, shall attach to the bill of lading or other evidence of receipt a stamp to be furnished by the shipper or consignor, of the value of 2 cts.

### Railway Route Maps Approved.

The Minister of Railways and Canals approved of the following railway route maps, Feb. 3:—

Edmonton, Dunvegan and British Columbia Ry., from Tp. 78, R. 7, w. 6 m., Alberta, to Tp. 78, R. 13, w. 6 m., about 48 miles.

Peace River Tramway and Navigation Co., from Fort Smith to Smith's Landing, Alberta, about 17 miles; also from south of Vermillion in Tp. 108, R. 6, w. 5 m., to the Peace River, north of Vermillion Falls, about 10 miles.

The Canadian Transfer Co.'s officers and directors elected recently for the current year are:—President, C. Cassils; other directors, Hugh Paton, G. R. Starke, Sir Montagu Allan, F. W. Molson; General Manager and Secretary, F. M. McRobie.

New Brunswick & Prince Edward Island Ry.—In the Senate, Feb. 12, in answer to Senator McSweeney, Senator Loughheed stated that there is an agreement for the purchase by the Dominion Government of the N.B. & P.E.I.R., which is 36 miles long, the owners being "The New Brunswick & Prince Edward Island Ry." the price to be \$270,000. The line is being operated by the Intercolonial Ry.

The Southampton Ry. Investigation.—The Minister of Railways laid on the table of the House of Commons, Feb. 8, the report of the investigation made into the construction of the Southampton Ry. in New Brunswick. The Commissioner, C. A. Pringle, K.C., finds that the Government had over paid a subsidy of \$34,607, and reprimands E. V. Johnson, Inspecting Engineer, Railways Department, for having accepted the construction engineer's word as to the cost of the line, but adds that it was a physical impossibility for Mr. Johnson to personally investigate the cost of construction of all the lines he had to inspect. Correspondence brought down with the report shows that the Department of Justice is taking steps to recover the amount of the overpaid subsidy.



### Attempt to Destroy Bridge Over St. Croix River.

Early on the morning of Feb. 2, Werner Vanhorn, (or Van Horn, or Von Horn), who subsequently claimed to be a German army officer, attempted to destroy by dynamite, the C.P.R. bridge over the St. Croix River, between St. Croix, N.B., and Vanceboro, Me. The bridge, which is designated no. 5.6, Brownville Subdivision, is 5.6 miles west of McAdam Jct., N.B., and is a 150 ft. through truss span. Originally it was a simple truss span, with the usual 2 trusses and floor beams and stringers. In 1906 the span was reinforced by the addition of similar trusses outside each existing truss, supported on spare space on bridge seats. New special floor system of the required capacity was also put in.

The attempt, which was made at the Canadian end of the bridge, affected the inner north truss, which had the end post damaged, and the adjacent stringer crippled, besides some other small damage. The substructure was not damaged. One passenger train was delayed 20 minutes, after which cars were pushed over without locomotives. A small amount of falsework was put under the damaged end, after which trains passed over under slow orders. Permanent repairs were effected within a few days. We are indebted to P. B. Motley, M. Can. Soc. C.E., Engineer of Bridges, C.P.R., for the information about the bridge, structure, etc.

After making the attempt Vanhorn returned to Vanceboro, where he had made his temporary headquarters, and was arrested there. On a charge of damaging property there by the shock of the explosion he was sentenced to the county jail at Machias, Me. An application for his extradition to Canada was made immediately by the British Ambassador at Washington, and is still under consideration.

After the attempt the C.P.R. placed special guards at the bridge, and on Feb. 16 a military guard was placed at the New Brunswick end, and an application has been made to the U.S. Government to similarly guard the Maine end.

### Proposal for Increased Passenger Fares in United States.

A campaign has been started in a number of Western States to obtain higher passenger fares on the railways. It is being carried on by the principal railways centreing on Chicago, and was inaugurated, so far as Illinois is concerned, on Feb. 3, when a committee of railway presidents, with C. H. Markham, of the Illinois Central, as chairman, had a conference with the Governor of the State. The committee applied for an increase in the passenger fares on the several lines from 2 to 2½ cts. a mile. The statement made to the Governor on the part of the railways sets out that for some years the railways have been facing a condition of stationary or declining rates for their services, and a steadily increasing cost of operation. The investigation of the Interstate Commerce Commission into the subject of railway operation and revenue is referred to. At this investigation, the generally unprofitable character of railway passenger service was emphasized to such a degree that the commission was impelled to give it special consideration, although the question of passenger fares was not specifically before that body. As a result of the findings of the commission upon passenger fares, the railway presidents are presenting the facts to the public and requesting that action be taken through the different State legislatures to obtain the relief suggested by the commission. The

Interstate Commerce Commission has authorized 2½ cts. as an interstate rate, and in the New England States legislative action is being taken to grant a similar rate within the several States. It is proposed to present a similar bill in Illinois.

In preparation for the presentation of this bill, the railways are circulating petitions throughout the State; and considerable statistical literature bearing on the subject, and are arranging for the holding of meetings all over the State. The petition quotes the following from the report of the Interstate Commerce Commission:—"The travelling public is giving expression to its demands for better service, better accommodation, and for the adoption by carriers of all devices that make for safety. A public that demands such service cannot reasonably object to the payment of a reasonable compensation therefor."

Similar campaigns are in progress in Ohio, Indiana, and Michigan, whilst in Nebraska an increase to 3 cts. a mile is asked; but a bill now before the Legislature proposes to increase the rate to 2½ cts.

### Locomotive Feed Water Heating.

At a meeting of the American Society of Mechanical Engineers recently, in discussing a report on "Steam Locomotives of Today," H. H. Vaughan, Assistant to Vice President, C.P.R., Montreal, said that considerable has been heard as to the experiments made on feed water heating by Mr. Trevithic on the Egyptian railways, in which he used not only exhaust steam heaters, but waste-gas heaters in the front end. With the latter he has been able to put the water into the boiler at 230 deg. and obtain 20% economy. The Central of Georgia Ry., has done a little with feed water heaters, as well as the New York Central,

the Canadian Pacific, and the Central Rd. of New Jersey.

"On the C.P.R. we have been experimenting with feed water heating for six years. We have tried open heaters in a tank with fairly good satisfaction. We also applied exhaust steam injectors, and got fair results. We have since been advised by the manufacturers that our troubles were because of our having applied too large size an injector for ordinary work on the locomotive. However, I am of the opinion that while the exhaust steam injectors would work fairly well under certain conditions, yet there would be some difficulties where the amount of water consumed is large. We found on experiments with an open heater that the temperature obtained was due to the exhaust steam from the feed pump, so, assuming a temperature of 200 deg. in the feed water, it would really be the equivalent of 160 deg. when the water was put into the boiler by an injector with 100% efficiency. By heating the water at the injector suction to 120 deg., we got 6% economy, and used injectors as against 10 or 12% economy with the feed water heater, and using a pump. We thought 6 or 7% with the injector was preferable to 10 or 12% with the pump, and we have been experimenting on that in recent years with reasonable results. Lately we have experimented with an ordinary closed feed water heater, and it is giving fair results.

"This is a subject which American railway people have largely neglected. It has the advantage of not only saving in coal, but increasing the capacity of the boiler. In careful experiments we found an economy of 12% in the use of the heater, and we feel that that justifies our going into the device more thoroughly. I feel that we will see feed water heating coming into larger use, not only with exhaust steam, but with waste gas."

### Grain in Store at Terminal Elevators, Interior Terminal Elevators and at Public Elevators in the East.

Week ended Feb. 11, 1915.	Wheat.	Oats.	Barley.	Flax.	Totals.
Fort William:—					
C.P.R. ....	111,154	45,560	11,778	3,547	172,039
Consolidated ....	311,149	148,697	31,425	90,963	582,234
Empire Elevator Co. ....	337,328	183,538	26,392	120,155	667,413
Ogilvie Flour Mills Co. ....	543,316	79,588	18,312		641,216
Western Terminal Elevator Co. ....	258,532	112,054	7,226	256,234	634,046
G.T. Pacific ....	569,804	326,388	19,754	87,793	1,003,739
Grain Growers' Grain Co. ....	880,378	277,775	37,826		1,195,979
Fort William Elevator Co. ....	489,408	111,291	34,571	54,519	689,789
Eastern Terminal Elevator Co. ....	128,711	119,565	11,306		259,582
Port Arthur:—					
Port Arthur Elevator Co. ....	1,197,051	175,072	40,736	84,234	1,497,093
D. Horn & Co. ....	19,539	8,669		37,479	65,687
Dominion Government Elevator. ....	218,347	51,199	3,440	76,371	350,357
Total Terminal Elevators ....	5,064,717	1,942,396	242,766	811,295	8,061,174
Saskatoon Dominion Government Elevator ....	172,844	634,402	12,641	454	1,200,344
Moosejaw Dominion Government Elevator ....	1,145,796	320,604	13,545		1,479,945
Total Interior Terminal Elevators ....	1,618,640	955,006	26,186	454	2,600,286
Depot Harbor ....		96,200			96,200
Midland:—					
Aberdeen Elevator Co. ....	355,471	130,204			485,675
Midland Elevator Co. ....					
Tiffin, G.T.P. ....	416,225	662,881			1,079,106
Port McNicol ....	1,784,827	495,478		75,339	2,355,635
Goderich ....	602,020	218,637			820,657
Goderich ....	113,141				113,141
Collingwood ....	2,044				2,044
Harbor Commissioners, Quebec ....	3,862	119,322			123,184
Kingston:—					
Montreal Terminal Elevator Co. ....	13,076				13,076
Commercial Elevator Co. ....	32,488	66,664			99,152
Port Colborne ....	132,702	240,055	11,566	39,141	423,464
Prescott ....					
Montreal:—					
Harbor Commissioners no. 1 ....	193,678		9,067		202,745
Harbor Commissioners No. 2 ....	103,785	610,609	24,901		739,295
Montreal Warehousing Co. ....	3,273	148,236	20,369		171,878
West St. John, N.B. ....	392,687	560,007			952,694
Total Public Elevators ....	4,471,549	3,339,810	171,706	75,339	8,058,516
Total quantity in store ....	11,154,906	6,282,212	440,641	88,634	18,776,393
Grain stored in vessels ....					100,000



## Railway Development.

### Projected Lines, Surveys, Construction, Betterments, Etc.

**Alberta and Great Waterways Ry.**—Track was reported, Feb. 6, to have been laid to Lac du Beau, mileage 137 from Carbondale, the starting point on the Edmonton, Dunvegan and British Columbia Ry. Construction is being pushed forward on the bridge across the arm of the lake at the track end, and it is expected to have the line completed to Fort McMurray by the end of this year. (Feb., pg. 56.)

**Brule Lake Ry.**—The Alberta Legislature is being asked to extend the time for the building of the projected railway from mileage 994 on the Grand Trunk Pacific Ry., on the east shore of Brule Lake, Alberta, south easterly through sections 26 and 24, tp. 49, range 27 west, and then north easterly through sections 19, 20 and 27, tp. 49, range 26. The provisional directors of the company, which was incorporated in 1913, are: G. G. S. Lindsey, K.C., Toronto; S. B. Woods, K.C., O. M. Biggar, E. W. Fula and J. T. J. Colisson, Edmonton, Alberta.

**Burrard Inlet Tunnel and Bridge Co.**—The British Columbia Government, which is being asked to guarantee the company's bonds for the erection of a bridge across the Second Narrows of Burrard Inlet, is considering, in connection with the application, the decision of the directors to accept a tender put in by C. A. P. Turner, Vancouver, for the erection of the bridge. The resolution accepting the tender states that the price of the bridge as contained in the offer is \$1,744,837, and sets out that the acceptance of the offer is conditional as follows: That the contractor agrees, as offered, to conform with the recommendations of R. Modjeski's report, and meet the requirements regarding the design therein contained, also, that the plans be approved by the Dominion Government. Further, provided that the structural steel required for the whole construction be purchased from B. C. structural steel manufacturers and the contractors agree to purchase all material and have all work possible done in B. C., and to employ to the maximum extent B. C. workmen on the work. Further, provided that the bridge company shall not assume any obligation with C. A. P. Turner, and that the work shall not be actively proceeded with until satisfactory financial arrangements have been made by the company. (Feb., pg. 56.)

**Canadian Terminal Ry.**—The New Brunswick Legislature is being asked to extend the time for the building of this projected railway from L'Etang Harbor to St. Croix, with branch lines. The company was originally incorporated in 1907, and in 1912 the provisional directors were changed to J. S. Clark, G. W. Ganong, H. I. Taylor, G. W. Marsh, W. L. E. Marsh, J. L. Clark, W. A. Mitchell, G. J. Clarke. (June, 1912, pg. 299.)

**Central Canada Ry.**—The Alberta Legislature is being asked to amend chapter 46 of the statutes of 1913 by authorizing the building of a railway from north of the line between tps. 64 and 65 on the Alberta and Great Waterways Ry., easterly and south easterly to the eastern boundary of the Province. The line at present authorized and under construction extends from McLennan, on the Edmonton, Dunvegan and British Columbia Ry. to Peace River Landing, with a branch to Battle River.

A press report states that on Feb. 6, track had been laid on 15 miles of the 28 miles of grading completed and is expected to have the remaining mileage laid early in March. The construction of the line to Peace River Crossing, a further distance of

22 miles, is being pushed forward with dispatch. (Feb., pg. 56.)

**Dominion Government Ry. to Hudson Bay.**—The report of the Chief Engineer on the construction of the line, presented to Parliament by the Minister of Railways, states that the located line shows a variation of only 24 miles from being an air line between Pas and Port Nelson, Man. About 350 out of the 412 miles have been graded, on which 204 miles of track has been laid. The telegraph line has been completed for 175 miles.

The estimates laid before the House of Commons include \$5,500,000 for construction of railway, terminals and elevators. (Feb., pg. 56.)

**Edmonton, Dunvegan and British Columbia Ry.**—A. T. Kerr, of the Board of Railway Commissioners' engineering staff, inspected the line to McLennan, mileage 245 from Edmonton, Alberta, at the end of January and is said to have favorably reported upon it. The contractors are operating a train service to McLennan, but it is expected that the line will be taken over and placed in the charge of a permanent operating staff early in March. (Feb., pg. 56.)

**Entwistle and Southern Alberta Ry.**—The Dominion Parliament is being asked to incorporate a company with this title to build a railway from the Grand Trunk Pacific Ry. at Entwistle, Alta., southerly to the Saskatchewan River near the boundary between tps. 17 and 18, west of the 5th meridian, 50 miles. Pringle, Thompson, Burgess and Cote, Ottawa, solicitors for applicants.

**Greater Winnipeg Water District Railway.**—The City of Winnipeg is building an aqueduct for 97.2 miles to secure water from Shoal Lake, adjoining Lake of the Woods. The located line runs south of the C.P.R. and National Transcontinental Ry. and north of the Canadian Northern main line, through an undeveloped section of the country. In order to take in the supplies and machinery required for the aqueduct construction it was necessary to build a railway along the aqueduct right of way. This road is of standard gauge, with 60-lb. rails and substantial roadbed. Including yards, spurs to gravel pit and sidings, there will be in all about 102.4 miles of track. The maximum grade is 0.5 ft. per 100 ft., and the standard minimum curvature is four degrees. The contractors' working tracks will be located between the railway and the trench, from which the track is distant 110 ft. The railway will cost approximately \$1,200,000, and is being built by the Northern Construction Co., of Winnipeg. Tracklaying was completed Dec. 17, 1914. There are still some seven miles to be ballasted. This will be carried out early in the spring in order to have the road in shape for the main aqueduct work, which will be commenced as soon as the frost leaves the ground. The clearing of the right of way was done by E. J. Bawlf, of Winnipeg. This cost \$79,360, and comprised: Clearing, 2,586 acres; salvage, 7,900 cords of wood, 349,000 lin. ft. poles; 14,467 fence posts.

A telephone line has been completed by the city from Winnipeg to Indian Bay. Residences have been erected for the engineers. Offtake drainage ditches have been dug. Roads have been built and other small works have been carried forward to prepare for the aqueduct construction.

The Commissioners, Feb. 15, let a contract

to the Progress Construction Co., Winnipeg, for the erection of a three stall locomotive house, with concrete pits, at Deacon, Man., at a cost of \$3,996.87.

Three trains a day each way are being operated over the line, construction supplies being taken in and cord wood being hauled out. (Feb., pg. 57.)

**Intercolonial Ry.**—The estimates laid before Parliament recently ask for the authorization of the following expenditures on capital account, among others:—

Dock and wharves, \$30,000; new terminal facilities, \$3,000,000 (which includes a revote of \$750,000); to increase accommodation and provide new machinery, \$3,500 (revote), and for Willow Park service, \$39,500 (revote). These expenditures are proposed to be made at Halifax, N.S.

Elimination of level crossings and grades at Moncton, N.B., \$125,000, of which \$85,000 is a revote, and a revote of \$22,500 for roofing at the same place is also included.

General improvements at Levis, Que., \$200,000.

To bring the New Brunswick and Prince Edward Island Ry., and the International Ry. of New Brunswick up to Intercolonial branch line standard \$25,000 and \$11,200 respectively. These two lines were taken over by the Railways Department, July 31, 1914.

For construction of a railway from near Dartmouth via Musquodoboit Harbor, and the Musquodoboit River Valley to Dean's Settlement, N.S., \$510,000, of which \$210,000 is a revote. (Feb., pg. 56.)

**Kettle Valley Lines.**—We are officially advised that track is laid continuously on the extension of the line from Midway to Penticton, 133.7 miles, and from Penticton to Osprey Lake Summit, 39 miles; from Otter Creek summit to Merritt, 30 miles; from a point on this stretch 25 miles west of Merritt, to the Coquihalla River, 16.4 miles, and from the Fraser River to a junction with the C.P.R., 1.9 miles. The work now being done covers the connecting up of these various sections, and includes the deviation from the original route to a junction with the Vancouver, Victoria and Eastern Ry., at Princeton, which company's line is to be used as a joint section to the Coquihalla River; and the section along the Coquihalla River Valley to Hope, which is also to be a joint section with the V. V. and E. Ry. The grading on the entire mileage is finished, and it is expected to lay the 31 miles of uncompleted track between Midway and Merritt, and the 35 miles on the Coquihalla River section, early in the summer. During 1914, track was laid on 58.1 miles, grading was completed on 65 miles, ballasting was done on 103 miles, and 46.52 miles of fencing were put up.

The bridge under construction at Hope, over which the connection with the C.P.R. will be made, is under construction. This bridge will consist of four steel spans, each 238 ft. long, resting on three concrete piers and two concrete abutments. The piers are sunk down in the bed of the river to solid foundation, one to solid rock, and the others to heavy boulders. The substructure has been completed, and the steel superstructure is being erected. Armstrong, Morrison & Co., Vancouver, put in the substructure, and the Canadian Bridge Co. is putting up the steel work. (Feb., pg. 56.)

**Montreal and South Western Ry. & Power Co.**—The Quebec Legislature is being asked to extend the time for the building of this projected railway from Adirondack Jct., on the C.P.R., along the St. Lawrence to the International boundary, and another line from Adirondack Jct., on the New York Central Rd., to Sunder, Que. The provisional directors are: V. Casson, L. Dansereau, A.



Geoffrion, G. N. Cusson, R. Gange, Montreal. The company has power to operate its lines by steam or electricity. (June, 1911, pg. 557.)

**Pacific Great Eastern Ry.**—J. W. Stewart, President, is reported to have stated in Vancouver, B.C., Feb. 4, that the contractors expected to have the uncompleted portions of the grade between Squamish and Fort George, linked up by Mar. 1. Track is reported to have been laid into Lillooet, mileage 120 from Squamish. Between Lillooet and Clinton, 50 miles, there is considerable bridge work. The foundations for the 2,600 foot bridge over the Fraser River are finished. It is expected to have track laid to Clinton by Aug. 1.

A regular train service is being operated from Squamish to Anderson Lake.

We are officially advised that track laying is to be started early in May from Fort George southerly, towards Clinton, and that the Squamish-Fort George section will be completed this year. This section involves the building of a high level bridge across the Cottonwood River.

Nothing has been decided as to the starting of construction from Fort George towards the British Columbia-Alberta boundary, where a junction is to be effected with the Edmonton, Dunvegan and British Columbia Ry.

The residents of the vicinity of North Vancouver decided, Feb. 3, to send a delegation to the Provincial Government asking that pressure be put on the company to push forward the construction of the section of the line from North Vancouver to Squamish. This piece of line is in operation from North Vancouver to Horse Shoe Bay, 12 miles, and the distance from the latter point to Squamish is 26 miles. (Feb., pg. 57.)

**Pacific, Peace River and Athabasca Ry.**—C. F. Law, Vancouver, is reported as stating, Feb. 1, that work in connection with this and its allied concerns will be started in the spring; that the company is applying for a change in the location of its projected terminals on the Pacific coast, and is completing its survey work. The first piece of work which will be put in hand will be a section of the Peace River Tramway and Navigation Co.'s undertaking. This will consist of a tramway at Vermillion Chutes on the Upper Peace River, which will connect two important navigable stretches of river and lake. A steamboat will be built at Peace River Crossing for the 550 miles of navigation to be opened up to Vermillion Chutes. (Jan., pg. 11.)

**Prince Edward Island Ry.**—The amounts chargeable to capital for which estimates have been submitted to Parliament for this year are:—Original construction, \$800 (revote \$200); to strengthen bridges, \$10,000; power plants, \$125; surveys and inspections, \$10,400; to increase accommodation and facilities along the line, \$17,600 (revote \$1,800); to provide car ferry, construct terminals and necessary connections, \$1-900,000 (revote \$800,000). (Jan., pg. 11.)

**Regina North Western Ry.**—The Dominion Parliament is being asked to extend the time for the building of this projected railway from Regina, Sask., to Tuxford, on the C.P.R., thence northwesterly to Red Deer, Alberta; with a branch to Battleford, Sask., and on to Fort McKay. The provisional directors are: G. L. Kavanagh, O. L. Brunelle, J. Whitesell, J. Clyma, G. Bordeau, Montreal.

**Simcoe, Grey and Bruce Ry.**—The Dominion Parliament is being asked to extend the time for the building of this projected railway from Southampton via Owen Sound and Meaford to Collingwood and from Southampton via Port Elgin and Tiverton

to Kincardine, Ont. The provisional directors named in the act of incorporation, which was obtained in 1911, are: C. M. Bowman, Southampton; J. B. Tudhope, Orillia; W. T. Torres, Collingwood; H. Pedwell, Thornbury; H. Cleland, Meaford; S. J. Porter, J. W. McLaughlin, C. Eaton, E. Lemon, R. McDowall, B. Allan, A. G. Mackey, Owen Sound. (Jan., 1914, pg. 22.)

**Toronto, Hamilton and Buffalo Ry.**—A conference of engineers interested in the elimination of grade crossings in Hamilton was held Feb. 11, when G. A. Mountain, Chief Engineer, Board of Railway Commissioners, discussed the matter with them. A number of alterations were suggested, which necessitate the preparation of an almost entirely new set of plans. These alterations, it is stated, will result in the saving of about \$300,000 in the cost of the work. The new plans will be ready for approval early in March. (Feb., pg. 57.)

**Toronto Terminals Ry.**—The Dominion Parliament is being asked to amend the company's act of incorporation by increasing the limits of its bonding powers, to authorize it to acquire lands, and to maintain and operate in Toronto freight and other facilities in such manner and to such extent as the business of the company may render expedient. (Aug., 1914, pg. 371.)

### Railway Finance, Meetings, Etc.

**Boston and Maine Rd.**—A bill has been introduced in the Maine Legislature to provide for the reorganization of the B. & M. R., by the amalgamation of the parent company with the subsidiary lines operating in the State. The matter is not being proceeded with at present, pending the investigation of the alleged possibility of a transportation monopoly by its passage.

**Canadian Northern Ry.**—A London, Eng., press dispatch states that the C.N.R. guaranteed 4% debenture stock has been placed on the list of securities, approved by the Treasury, in which trust funds may be invested.

A lease of rolling stock from the Imperial Rolling Stock Co. to the C.N.R., dated Oct. 1, 1914, and numbered series K 1, 1914, was deposited with the Secretary of State at Ottawa, Jan. 22. This refers to the rolling stock covered by recent bonds to the value of \$2,000,000 placed on the Philadelphia market, recently. The bonds are to be redeemed by half yearly payments of \$150,000, the first payment being due in October.

A London, Eng., cablegram of Feb. 12 says the C.N.R. has privately placed an additional £500,000 sterling, 4% guaranteed debenture stock.

**Grand Trunk Ry.**—London, Eng., cablegram, Feb. 19:—Announcement was made today that the G.T.R. will pay a final dividend of only 1½% on the 4% guaranteed stock, making 3½% for the year, whereas for the previous year full dividends were paid on first and second preferences, together with 2½% on the third preference. This caused a great weakness in G.T.R. issues, the notes alone being unaffected. In order to make this distribution, the carry forward has to be drawn on to the extent of £12,400.

**Great Northern Mining and Ry. Co.**—Notice has been given of the redemption of a number of bonds on Mar. 1, at 5% premium and accrued interest, under the terms of the trust deed of Feb. 8, 1911.

**International Ry. of New Brunswick.**—The New Brunswick Legislature is being asked to authorize the conveyance of the line to the Dominion Government. The transfer of the property was arranged in July, 1914, and the line has been operated since Aug. 1, as a branch of the Intercolonial Ry.

**Michigan Central Rd.**—Application was filed in the U. S. District Court, Detroit, Mich., Feb. 1, on behalf of a number of shareholders asking for the appointment of a receiver. The petitioners allege that the company's business is being diverted by the New York Central and Hudson River Rd. control for the benefit of other railways under the same control, and ask for an injunction to prevent the N.Y.C. and H.R. Rd. vote being used in the control of M.C.R. affairs. The petition alleges among other things that the M.C.R. credit is being used for the purchase of rolling stock for competing lines.

**Toronto, Hamilton and Buffalo Ry.**—The agreement under which the Erie and Ontario Ry. becomes merged in the T.H. and B. Ry. was filed with the Secretary of State, Ottawa, Jan. 30.

**White Pass and Yukon Route.**—Gross earnings for two weeks ended Jan. 14, \$2,961, against \$3,736 for same period 1914.

### Commodity Rates to U. S. Pacific Coast Terminals, Etc.

The Interstate Commerce Commission has decided the applications for relief from the provisions of the fourth section of the Act to Regulate Commerce, as amended June 18, 1910, with respect to commodity rates from eastern defined territories to Pacific Coast terminals and intermediate points as follows:

Carriers authorized to establish certain carload commodity rates from Missouri River territory to Pacific coast terminals lower than to intermediate points, provided rates contemporaneously applicable on like traffic to intermediate points do not exceed 75 cts. per 100 lbs.

Carriers authorized to establish certain carload commodity rates from points in zones 2, 3, and 4 to Pacific Coast terminals lower than to intermediate points, provided rates from Missouri River territory to intermediate points are not exceeded by more than 15, 25, and 35 cts. per 100 lbs. from points in zones 2, 3 and 4, respectively.

Carriers authorized to establish certain less than carload commodity rates from Missouri River territory to Pacific Coast terminals lower than to intermediate points, provided the rates contemporaneously applicable on like traffic to intermediate points do not exceed \$1.50 per 100 lbs. on articles classified as first or second class and \$1.25 per 100 lbs. on articles classified as third or lower class in western classification.

Carriers authorized to establish certain less than carload commodity rates from points in zones 2, 3, and 4 to Pacific Coast terminals lower than to intermediate points provided the rates to intermediate points do not exceed the rates contemporaneously applicable from the Missouri River territory to the same points by more than 25, 40, and 55 cts. per 100 lbs. from points in zones 2, 3, and 4, respectively.

Suggestion made that carriers readjust rates to back haul points by either adding to the full terminal rates something less than the full local from terminals to destination or by the publication of basing rates to the terminals less than the terminal rates to be used in connection with local rates from the terminals in determining rates to intermediate points.

**Fitzhugh.**—The Grand Trunk Pacific Ry. division point, 1,027 miles west of Winnipeg and near the Yellowhead Pass, which was named after E. H. Fitzhugh, formerly Vice President, G.T.R., is now known as Jasper, it being the headquarters of the Jasper Park officials.



## Railway Rolling Stock Notes.

The G.T.R. has received two first class cars from Canadian Car and Foundry Co.

The Canadian Northern Ry. has received three baggage cars from Crossen Car Co.

The C.P.R., between Jan. 15 and Feb. 15, received 8 steel baggage and express cars, 5 steel frame box cars and 49 flat cars, from its Angus shops, Montreal.

New Glasgow, N.S., press reports indicate that the Eastern Car Co. has representatives in Russia at present, and that there is a possibility of that government placing orders shortly for cars of various types.

The estimates for the current year submitted to the House of Commons, ask for \$2,250,000 (of which \$380,000 is a revote) for rolling stock; \$24,000 for safety appliances for equipment, and \$3,400 to improve triple valves of air brakes for the Intercolonial Ry.

Press reports recently stated that the G. T. R. was building freight cars at its Elsdon, Ill., shops, but we are officially advised that some four or five cars, which were partially destroyed by fire about a year ago are being rebuilt there, and that the company is not contemplating building any cars there at present.

The 12 side dump cars which the Greater Winnipeg Water District Commissioners have ordered from the Canadian Car and Foundry Co., are to be of 6 cub. yds. capacity, with running gear of steel or iron to conform to standard M. C. B. specifications. The body is to be of oak with steel reinforcements, and the couplers are to be of the standard railway link and pin type, and the cars are to have hand brakes.

The Canadian Car and Foundry Co., since Jan. 15, has received orders for 50 steel underframe express refrigerator cars for the G.T. Pacific Ry.; 12 wooden side dump cars, for the Greater Winnipeg Water District, and 40 two way air steel dump cars, through F. H. Hopkins & Co., for the Greater Winnipeg Water District; 3 pairs of 50 ton trucks for the St. Lawrence Bridge Co.; 1 pair 50 ton trucks for the Confederation Construction Co., and 6 ore cars, 50 tons capacity for the Mond Nickel Co.

The chief details of the 40 dump cars which the Greater Winnipeg Water District Commissioners have ordered from F. H. Hopkins and Co., and which will be built by Canadian Car and Foundry Co., are as follows,—type of car, 16 cubic yard, or 20 cubic yard automatic two way air side dump, standard gauge; trucks and draft gear couplers, M.C.B. type; brakes, air, and auxiliary hand; safety appliances to conform to the Board of Railway Commissioners' requirements; construction, entirely of steel or iron except the floor, which may be of wood.

The Greater Winnipeg Water District Commissioners have ordered 4 locomotives, two of which are to be equipped with superheaters, and 1 saddle tank dinky locomotive, from Montreal Locomotive Works; 40 twenty yard air dump cars, from F. H. Hopkins and Co.; 12 six yard dump cars, from Canadian Car and Foundry Co.; and have purchased 20 flat cars and 4 cabooses, from O'Brien, Fowler and McDougall Bros., contractors, Ottawa; 10 box cars from J. A. McTaggart, Winnipeg, and 1 combination passenger and baggage car, from W. H. Wilson and Co., Philadelphia.

The G.T. Pacific Ry. has ordered 50 express refrigerator cars from the Canadian Car and Foundry Co. Following are the chief details:—

Length between end sills ..... 41 ft. 0% ins.  
Length inside between ice tanks ... 35 ft. 5 ins.  
Width over all ..... 9 ft. 8% ins.  
Width inside ..... 8 ft. 7% ins.

Height top of rail to top of running board ... 13 ft. 3 ins.  
Height top of rail to centre of coupler ..... 2 ft. 10% ins.  
Draft gear and buffing device .... Friction type  
Air brakes ..... Westinghouse KC-1012  
Couplers ..... Climax  
Trucks ..... Diamond arch bar  
Wheel base ..... 6 ft. 6 ins.  
Journals ..... M.C.B. 5 x 9 ins.  
Wheels ..... Rolled steel, 36 ins.  
Truck bolsters ..... Simplex  
Brake beams ..... Simplex  
Side bearings ..... Wood

The four locomotives which the Greater Winnipeg Water District Commissioners have ordered from Montreal Locomotive Works, are required to have a tractive effort of from 20,000 to 24,000 lbs., with a maximum speed of 25 miles an hour on a level grade, with a trailing load of 1,000 tons gross behind the tender. The weight of each locomotive is not to exceed 65 tons. They are to be fitted with standard straight and automatic air brakes, air signal and air sander. The dome is to be provided with a 1 in. air connection including valve fitted for steam hose, with 50 ft. of 1 in. steam hose with two couplings. The boilers must conform to the Manitoba and Ontario rules and regulations. Ash pans of the dump type, extra headlight on rear of tender, Detroit lubricators, Ohio injectors, C.N.R. standard boiler feed and check valves. The driving wheels must be equipped with hard grease cellars, and cups for hard grease supplied for the side rods. The tender axles are to be fitted with standard brasses interchangeable with those used on cars. Standard safety devices must be supplied for the locomotives, and the front of the locomotive and rear of the tender must be equipped with stub pilot braced to the body, and on this must be attached a foot board, and seat boxes must be furnished in the cabs. Spare parts to be supplied, include lubricator cup, complete injector, set of injector tubes, boiler feed check valves, complete driving box, grease cellar for driving box complete, set of tender brasses, 2 jacks, pair car replacers, 2 pinch bars, coal hammer and shovel and complete set of engineer's small tools. The dinky locomotive must have a tractive effort of 7,000 lbs., and is not to exceed 20 tons. It is to be equipped with M.C.B. automatic couplers with slotted knuckles, front and back, and two head-lights.

### Canadian Pacific Railway Construction, Betterments, Etc.

**Montreal Subways.**—The Montreal City Council has under consideration tenders for the putting of subways under the C.P.R. tracks at St. Denis and Ontario Streets, at a cost to the city of about \$500,000. These are to replace existing subways which are not sufficiently large for the present traffic.

**Sault Ste. Marie Bascule Bridge.**—The bridge connecting the C.P.R. lines in Canada with its subsidiary the Minneapolis, St. Paul and Sault Ste. Marie Ry., at Sault Ste. Marie, across the ship canal, is said to be the longest of its kind in the world. It is 356 ft. long between pier centres, and 336 ft. long between trunnions. Each leaf is composed of two rivetted trusses, 168 ft. long and 55 ft. deep, spaced 20 ft. apart, and counter balanced by heavy overhead masses of concrete. Each leaf, with its machinery, is carried on a tower, the trunnion being at the base of the framing which carries the counterweight and the accompanying mechanism. Expansion and contraction is allowed for by one central tower with its leaf and counterweight being placed on rollers, so

that it is free to move when the bridge is closed. The weight of structural steel in the bridge is 1,400 tons, and each of the leaves, with its floor system, weighs 400 tons. The bridge is operated by electricity, and it can be opened and closed in 1 1/4 minutes.

**Western Lines.**—Grant Hall, Vice President and General Manager, returned to Winnipeg, Feb. 15, after having completed his first inspection over the lines west of Winnipeg since his recent promotion. The various lines, he said, are in good condition. Work at Rogers Pass tunnel is progressing faster than was anticipated, and it is expected to finish the work within two years. So far as the construction plans for the year are concerned he said there is nothing to add to the general statement made on his return from Montreal, and which appears on page 101 of this issue.

**Second Track on Western Lines.**—The details of the second track work completed in 1914 on Western Lines show that 20 miles of grading, 100.2 miles of tracklaying and 125 miles of ballasting were done, distributed as follows:

	Miles graded.	Miles track laid.	Miles ballasted.
<b>Manitoba Division:</b>			
Kemnay-Virden .....	1.5	2.4	2.4
Whitewood-Broadview ..	..	6.8	18.1
	1.5	9.2	20.5
<b>Saskatchewan Division:</b>			
Broadview-Grenfell ..	0	16.0	16.0
Indian Head-Regina ..	0	13.5	21.0
Chaplin-Swift Current ..	0	11.0	11.0
	0	40.5	48.0
<b>British Columbia Division:</b>			
Revestokle-Taft .....	13.0	24.0	24.0
Pritchard-Kamloops ..	2.5	25.5	25.5
Kamloops-Tranquille ..	3.0	3.0	9.0
	18.5	50.5	56.5

**Vancouver Hotel.**—F. Swales, architect in charge of construction at the hotel, is reported to have stated that he had received instructions to proceed with the finishing, decoration and furnishing of the main building and the Granville St. Annex, and to start construction on the new Marpole wing. This wing is to be built on a part of the site now occupied by some of the hotel buildings, which are to be cleared as soon as the main part of the building is opened. This wing will correspond with the 10 story wing on the east side. The main part of the hotel is expected to be opened about May 1. (Feb., pg. 62.)

**Spark Arresters for Locomotives Burning Non Coking Coals.**—Referring to the Board of Railway Commissioners' circular, printed on page 87 of this issue, we are officially advised that, owing to several requests made by parties interested, the date set for the submission of comments to the Board has been extended from Feb. 20 to Mar. 16.

**The Canadian Society of Civil Engineers' Ottawa Branch** was addressed, Feb. 4, by W. Sanford Evans, Chairman of the Georgian Bay Canal Commission, on the economics of engineering problems. In referring to his work in connection with the Georgian Bay Canal project, he stated that a preliminary report will be presented shortly, in which there will be a great deal of useful information.

**Locomotive Fuel Oil Tanks at Vancouver.**—The Union Oil Co. is erecting a large oil tank in the C.P.R. yards at Vancouver, similar in size and construction to the two already completed. Each of the tanks has a capacity of 55,000 barrels, so that the three will have a total storage capacity of practically 7,000,000 gals. A berthing slip for the steamships bringing in the oil is under construction at the tanks. The completion of this will obviate the use of the long pipe line and auxiliary pumping station now on pier A.



## Mainly About Railway People.

**Sir Wm. Mackenzie** has retired from the National Trust Co.'s board.

**Sir Thos. and Lady Tait** are spending part of the winter at Bellairs, Florida

**W. J. Hammond**, station agent, Canadian Northern Ry., Colborne, Ont., died suddenly there, Jan. 27.

**R. Marpole**, General Executive Assistant, C.P.R., Vancouver, B.C., left there Feb. 3, for a short holiday in California.

**Miss J. A. Drayton**, who died at Toronto, Jan. 29, was a sister of **H. L. Drayton, K. C.**, Chief Railway Commissioner, Ottawa.

**G. M. Bosworth**, Vice President, Traffic Department, C.P.R., has been re-elected a director of the Provincial Bank of Canada.

**D. B. Hanna**, Third Vice President, Canadian Northern Ry., has been elected a director of the company.

**A. G. Penny**, Assistant Advertising Agent, Canadian Northern Ry., Toronto, was married at Montreal recently to **Miss E. L. Benton**.

**D. B. Hanna**, Third Vice President, Canadian Northern Ry., and **Mrs. Hanna**, spent about a fortnight in Florida and other southern places in February.

**J. R. W. Ambrose**, Chief Engineer, Toronto Terminals Ry., read a paper on Toronto grade separation before the Canadian Railway Club in Montreal, Feb. 9.

**W. D. Scott**, General Manager, Spokane, Portland & Seattle Ry., Oregon Trunk Ry., Oregon Electric Ry. and United Rys. Co., died at Portland, Ore., recently, aged 56.

**Jules Hone**, Dominion Government Director, Grand Trunk Pacific Ry., is included in the estimates submitted to Parliament recently for \$2,000 as yearly remuneration.

**Mrs. Ross**, widow of the late James Ross and mother of **J. K. L. Ross**, director, C.P.R., died in Montreal, Feb. 22, after a brief illness.

**L. B. MacFarlane** has been elected President, Bell Telephone Co. of Canada, Ltd., Montreal, succeeding **C. F. Sise**, who remains on the board.

**C. J. Harris**, Foreman Brass and Tool Shop, Intercolonial Ry., Moncton, N.B., was presented with a Morris chair, by his associates, recently, on his retirement after 27 years service.

**H. H. Vaughan**, Assistant to Vice President, C.P.R., Montreal, gave an address on shell manufacture, illustrated by lantern slides, before the Canadian Society of Civil Engineers in Montreal, Feb. 4.

**J. H. Johnston**, Superintendent, Bridges and Buildings, G.T.R., Montreal, has been appointed a member of the American Railway Bridge and Building Association's committee on crossing gates, towers, etc.

**A. K. Grimmer**, A.M.Can.Soc.C.E., who resigned the position of City Engineer of Medicine Hat, Alta., recently, was, in 1906, engineer in charge of the Glenn extension of the York and Carleton Ry., in New Brunswick.

**Stewart Gordon**, who was formerly connected with the Hotel Department, C. P. R., has been appointed Secretary-Treasurer of one of the larger hospitals being organized by the St. John's Ambulance Association for service in Europe.

**A. E. Doucet**, M.Can.Soc.C.E., District Engineer, National Transcontinental Ry., Quebec, was entertained to dinner, Feb. 5, by a number of the divisional engineers who formed the engineering staff during the construction of the railway.

**George Beckingham**, Superintendent of Track, Eastern Lines, G.T.R., Montreal, has

been appointed a member of the Roadmasters and Maintenance of Way Association of America's committee on new and experimental track accessories and tools.

**W. McNab**, Principal Assistant Engineer, G.T.R., Montreal, addressed the Canadian Society of Civil Engineers, Toronto Branch, Feb. 25, on the construction of the Grand Trunk Pacific Ry., the address being illustrated by lantern slides and motion pictures.

**G. Blackbird**, Locomotive Foreman, G.T.R., Richmond, Que., who has retired under the pension rules, after 49 years of continuous service with the company, was presented with a case of silver and an address by the local staff and a number of residents, at Richmond, recently.

**Lt.-Col. Lacey R. Johnson**, M. Can. Soc. C.E., General Superintendent, Angus Shops District, C.P.R., Montreal gave an informal talk, illustrated by lantern slides, before the Canadian Society of Civil Engineers, in



**R. L. Fairbairn**, General Passenger Agent, Eastern Lines, Canadian Northern Ry., and Chairman, Niagara Frontier Summer Rate Committee.

Montreal, Feb. 15, on "Heavy guns used in the field."

**John B. Laurie**, Purchasing Agent and General Storekeeper, Central Vermont Ry., St. Albans, Vt., who died there recently, was born at Sarnia, Ont., Feb. 22, 1862, and entered railway service with the G.T.R., as storekeeper at London, Ont., transferring to the C.V.R. in Sept., 1899.

**John Murphy**, Chief Electrical Engineer of the Department of Railways and Canals, and Electrical Engineer, Board of Railway Commissioners, was a passenger in the I.R. C. train which left the track near Campbellton, N.B., Jan. 29. Neither he, nor any of the other passengers were seriously hurt.

**David McCoole**, Superintendent of Track, Toronto Terminals, G.T.R., has been appointed a member of the Roadmasters and Maintenance of Way Association of America's sub committee no. 3, on the proper organization of section forces and methods for maintaining and policing track for large terminals.

**W. L. Fagan**, who died at Vancouver, B.C., Jan. 28, aged 74, was in railway service in Ontario many years ago, on the Great Western Ry., and went to British Columbia in 1886. He was the first agent for the C. P.R., at Port Moody, and also the first agent for the same company at New Westminster.

**Stewart Gordon**, at one time Manager of the C.P.R. hotels at Banff, Alta., and Victoria, B.C., and who has been living in England for several years, has been appointed Secretary-Treasurer of a large hospital which is being organized by the St. John Ambulance Association for service on the European continent.

**Sir James Bell**, who has been appointed Chairman of the Glasgow and South Western Ry. (Scotland), vice **P. T. Caird**, resigned, has been a director since 1896, and acted as Deputy Chairman since 1900. He is a principal of Bell Bros. and Co., steamship owners and exporters, Glasgow, and a former Lord Provost of the city.

**A. T. Genest**, A.M.Can.Soc.C.E., who died at Ottawa, Jan. 27, was born at Fermont, Que., July 10, 1859, and was engaged, in his early days, on railway location and construction in the Laurentians, on what is now part of the Canadian Northern Ry. Later he was an engineer in connection with the projected Georgian Bay Canal.

**John Leslie Knight**, who was appointed acting auditor and chief clerk, Midland Ry. of Manitoba, Winnipeg, as announced in our last issue, was born at Kensington, Eng., Apr. 28, 1889, and entered M.R. of M. service, Sept. 1, 1912, since when he has been, to Feb. 1, 1914, timekeeper; Feb. 1 to Aug. 14, 1914, accountant, General Superintendent's office.

**W. D. Reid**, President, Reid Newfoundland Co., has presented the Newfoundland Regiment, with two machine guns. One of his sons is serving in the regiment as a private, and another is a lieutenant in the second contingent, and it is stated that he will, on reaching England, be transferred to the army flying corps, for which service he volunteered.

**L. V. Harrington**, whose appointment as Night Chief Dispatcher, Toronto, Hamilton and Buffalo Ry., Hamilton, Ont., was announced in our last issue, was born at Attercliffe, Ont., Mar. 17, 1884, and entered T.H. & B.R. service, July, 1901, since when he has been, to July, 1909, agent and operator at different points; July, 1909 to Jan. 1, 1915, dispatcher, Hamilton, Ont.

**Brigadier-General H. C. Nanton**, in regard to whom some information was given in our last issue, has been made a Companion of the Order of the Bath, by the King. He started his professional career as an Engineer, on C.P.R. location in the Rocky Mountains in 1884, Sir Herbert Holt being a member of the same party. He is now Chief Engineer Officer of the Indian Forces in active service in Europe, in the neighborhood of Ypres and La Bassee.

**W. J. Warnick**, whose appointment as Trainmaster, Toronto, Hamilton and Buffalo Ry., Hamilton, Ont., was announced in our last issue, was born at Hamilton, Ont., Mar. 20, 1880, and entered T.H. & B.R. service Jan. 9, 1896, since when he has been, to Mar. 1897, clerk in General Office; Mar., 1897, to July, 9, 1902, operator and freight clerk; July 9, 1902, to 1910, dispatcher; 1910 to 1912, Assistant Chief Dispatcher; 1912 to Jan. 1, 1915, Chief Dispatcher.

**William Henry Staniland**, whose appointment as Chief Dispatcher, Toronto, Hamilton and Buffalo Ry., Hamilton, Ont., was announced in our last issue, was born at St. George, Ont., July 3, 1878, and entered T.H. & B.R. service, Sept. 21, 1895, since when he has been, to May 1, 1902, agent and



operator at various points; May 1, 1902 to Mar. 1, 1914, dispatcher, Hamilton; Mar. 1, 1914 to Jan. 1, 1915, Night Chief Dispatcher, Hamilton.

**Arthur Hatton**, whose appointment as General Superintendent of Car Service, C.P.R., Montreal, was announced in our last issue, was born in London, Eng., Apr. 12, 1869, and entered railway service, June 1888, since when he has been, to July 1890, station agent, Central Ontario Ry., at various points; June 1891 to July 1896, telegraph operator, C.P.R., Eagle River, and Kenora, Ont.; June 1896 to Sept. 1901, dispatcher, C.P.R., Kenora, and Fort William, Ont.; Sept. 1901 to Jan. 1907, Chief Dispatcher, C.P.R., at various points on the Western Lines; Jan. 1907 to Mar. 1912, Inspector of Transportation, C.P.R. Winnipeg; Mar. 1912 to Jan. 1915, Superintendent of Car Service, C.P.R., Winnipeg.

**Silas B. Wass, A.M.Can.Soc.C.E.**, whose appointment as Assistant Superintendent, Intercolonial Rys., Fredericton, N.B., in charge of station service, train service and track, St. John and Quebec Ry., was announced in our last issue, was born in Perth County, Ont., July 11, 1880, and entered railway service, July 1906, since when he has been, to Jan. 1908, Resident Engineer, C.P.R., Walkerton, Ont.; Jan. 1908 to Jan. 1909, Assistant Engineer, C.P.R., Durham, Ont.; May 1909 to Sept. 1910, Chief Engineer, Aroostook Valley Rd., Presque Isle, Me.; Sept. 1910 to Jan. 1912, Assistant Engineer, C.P.R., Montreal; Jan. 1912 to Apr. 1914, Assistant Chief Engineer, St. John and Quebec Ry., Fredericton, N.B.; Apr. to Dec. 1914, Chief Engineer, same road.

**John Ross**, who died at Montreal, Feb. 4, aged 70, was born in Scotland, came to this continent in early life, and worked for some time on railway construction in the United States. During the building of the C.P.R. through the Rockies, he obtained some contracts there, in partnership with the late D. McDermott. These contracts covered a good portion of the snow shedding through the Rogers Pass. He subsequently was engaged on railway construction for the C.P.R. and other companies in the east. As a partner in Ross, Barry and McRae, he was one of the builders of the Canadian Northern Ry. between Joliette and Quebec, and in the Ross Harris Co., carried out a contract on the C.P.R. Toronto-Sudbury Line, while in conjunction with G. McComb, he built a portion of the Montreal and Southern Counties Ry., and was interested in many other contracts on the C.P.R., C.N.R. and G.T.R. He was also interested in contracts on the Welland Canal.

**H. J. Humphrey**, whose appointment as Superintendent Car Service, Western Lines, C.P.R., Winnipeg, was announced in our last issue, was born at Berry's Mills, N.B., Jan. 26, 1879, and entered railway service June 1896, since when he has been, to Aug., 1897, telegraph operator, Intercolonial Ry., at various points; Aug. 1897 to Aug. 1901, telegraph operator, Boston and Maine Rd., at various points; Aug. 1901 to Apr. 1902, telegraph operator, Intercolonial Ry., at various points; May 9, 1902 to Sept. 6, 1903, telegraph operator, C.P.R., Calgary, Alta.; Sept. 6 1903 to June 1, 1907, dispatcher C.P.R., Calgary, Alta.; June 1, 1907 to Nov. 1, 1909, dispatcher, C.P.R., Medicine Hat, Alta.; Nov. 1, 1909 to Apr. 10, 1911, dispatcher, C.P.R., Calgary, Alta.; Apr. 10, 1911 to July 1, 1912, Chief Dispatcher C.P.R., Macleod, Alta.; July 1, 1912 to Jan. 8, 1915, Car Service and Fuel Agent, C.P.R., Saskatchewan Division, C.P.R., Moose Jaw.

**R. Marpole**, General Executive Assistant, C.P.R., Vancouver, B.C., sent, as mentioned in our February issue, 20 recruits for the Welsh Army Corps being raised in Wales.

They sailed by the s.s. Grampian from St. John, N.B., Jan. 29, for Liverpool, and were to go from there to Llandudno or Cardiff, as the Welsh Army Corps executive committee might decide. Mr. Marpole paid their entire transportation expenses to their destination, and gave each man sufficient to visit his home four days after joining the battalion. He has also undertaken to pay the expenses to Vancouver of any of the men who may be incapacitated while in active service, or within 90 days after peace is declared, and after being properly released from active duty by the commanding officer. The private secretary of the Chancellor of the Exchequer, Right Hon. D. Lloyd George, has written Mr. Marpole thanking him for his timely assistance and stating that the men will be included in the Gwent Battalion, under Col. Sir Hamar Greenwood, M.P.

**Allan Kilpatrick**, whose appointment as Superintendent, G. T. Pacific Ry., Edson, Alta., was announced in our last issue, was born at Closeburn, Dumfriesshire, Scotland, Apr. 20, 1863, and entered railway service in Oct., 1878, since when he has been, to May, 1881, freight clerk, Glasgow and South Western Ry., Maybole, Scotland; July, 1881, to Apr., 1882, clerk in Audit Office, G.T.R., Montreal; Apr. to Aug., 1882, freight clerk, G.T.R., Coteau Jct., Que.; Sept., 1882, to 1890, chief clerk, Mechanical Department, Canada Atlantic Ry., Ottawa; 1890 to 1892, audit clerk in charge of car records and passenger accounts, same road, Ottawa; 1892 to 1897, General Agent in charge of operations during construction, Ottawa, Arnprior and Parry Sound Ry., Scotia Jct. and Parry Sound, Ont.; 1897 to 1900, Assistant Trainmaster, Canada Atlantic Ry., Madawaska, Ont.; 1900 to 1905, Assistant Trainmaster, same road, Depot Harbor, Ont.; 1905 to 1911, Assistant Trainmaster, G.T.R., Depot Harbor, Ont.; 1911 to Jan., 1915, Superintendent on Construction, National Transcontinental Ry., Cochrane, Ont.

**W. M. Ansley**, who has been appointed acting Superintendent, District 2, Alberta Division, Lethbridge, during the absence on leave of F. Walker, was born at Flesherston, Ont., June 15, 1873, and entered railway service Apr. 6, 1897, since when he has been, to Dec. 1900, with Canada Atlantic Ry. at Depot Harbor, Ont.; Dec. 1900 in service of Algoma Central and Hudson Bay Ry., Sault Ste. Marie, Ont.; Aug. 4, 1901 to Mar. 17, 1903, brakeman, C.P.R., Kenora, Ont.; Mar. 17, 1903 to Aug. 19, 1907, conductor, same road; Aug. 19 to Nov. 3, 1907, Assistant Trainmaster, same road, Brandon, Man.; Nov. 3, 1907 to completion of construction, Trainmaster, Sheho Extension, same road, Saskatoon, Sask.; from then to Oct. 1, 1908, Trainmaster, same road, Saskatoon Sask.; Oct. 1, to Dec. 1, 1908, Trainmaster, same road, Souris, Man.; Dec. 1, 1908, to May 1909, Trainmaster, same road, Brandon, Man.; May 1909 to July 1911 Trainmaster, same road, Revelstoke, B.C., and during a portion of this period, acting Superintendent there; July 1911 to Nov. 1913, Trainmaster, same road, Grand Forks, B.C.; Nov. 1913 to Feb. 1915, Trainmaster, same road, Macleod, Alta.

**R. L. Fairbairn**, General Passenger Agent, Eastern Lines, Canadian Northern Ry., Toronto, who has been elected Chairman, Niagara Frontier Summer Rate Committee for the current year, and whose portrait appears in this issue, was born at Stillwater, Minn., Nov. 24, 1880, his parentage being Canadian. He entered railway service in July, 1899, since when he has been, to Mar., 1904, in office of Auditor of Passenger Receipts, G.N.R.; Mar., 1904 to May 1, 1906, in Passenger Traffic Manager's office, same road; May 1 to Dec. 1, 1906, as-

sistant rate clerk, Passenger Department, same road; Dec. 1, 1906 to June 1, 1908, chief rate clerk, Passenger Department, same road; June 15, 1908 to Oct. 1910, chief clerk, Passenger Department, Canadian Northern Ry., Winnipeg; Oct. 1910 to Apr. 1911, District Passenger Agent, C.N.R., Saskatoon, Sask.; Apr., 1911, to May, 1912, Assistant General Passenger Agent, lines east of Port Arthur, Toronto; May 1912 he was appointed to his present position as General Passenger Agent, Eastern Lines, C. N.R., and Canadian Northern Steamships, Ltd.

**Thos. Swinyard**, President, Dominion Telegraph Co., who died in New York, N.Y., Feb. 25, aged 83, was born at Guildford, Surrey, Eng. In 1850 he was appointed Secretary to the General Manager, London & North Western Ry. of England, and was Secretary of the Railway Officers Monthly Conference in London. In 1862 he came to Canada as General Manager, Great Western Ry., with office at Hamilton, Ont., and in connection therewith was Vice President, Detroit & Milwaukee Railway. In 1874 he was appointed by the Dominion Government to take over, complete and organize the Prince Edward Island Ry. In 1875 he was appointed General Manager, Dominion Telegraph Co., and subsequently became its President. For some years he was Vice President, New York, Ontario & Western Ry. In 1897 he represented the Dominion Government in the arbitration case at Vancouver between the Government and the C.P.R.; of late years he lived at The Hall, Gilbertsville, N.Y., his second wife, who survives him, being a daughter of the late G. Y. Gilbert of that place. He was buried at Gilbertsville.

**Davenant Rodger** who died at Brooklyn, N.Y., Jan. 19, aged 62, is spoken of by Engineering News, New York, as "a prominent Canadian civil engineer." The News says: "Col. Rodger was connected with the construction of the Canadian Pacific Ry. and the Cape Cod Canal and was commissioned by the Canadian Government to observe the construction of the Croton aqueduct and the siphon under the Harlem River. He was for many years Chief Engineer of the Chilean Government. At the time of his death, he had been engaged as prospective chief engineer of an irrigation project on the Colorado River in Arizona." The Mr. Rodger referred to is no doubt "Dave" Rodger, as he was known some 30 years ago. In 1875 he went from Montreal to the west and was section engineer at Ingolf, Ont., on section 15 of the C.P.R., which extended from Keewatin to Cross Lake and was under contract from the Dominion Government to the late Jos. Whitehead, the Division Engineer being Henry Carre, M.Can.Soc.C.E., now of Belleville, Ont. In 1881 he joined H. N. Ruttan, M.Can.Soc.C.E., of Winnipeg, as a member of the firm of Ruttan, Rodger & Co., and P. J. Brown & Co., who built the Manitoba and Southwestern Colonization Ry. from Winnipeg to Elm Creek, and as engineers and contractors built the Portage, Westbourne and Northwestern Ry., from Portage la Prairie to near Neepawa. He left Manitoba in 1883 for New York.

**A New Transcontinental Railway** has gone into operation. It is a working combination of the St. Louis & San Francisco Rd. and the Santa Fe system. The route is via the St. Louis & San Francisco from New Orleans to Houston, Tex., and then over the Santa Fe to San Francisco, including the Coleman and Belen cut offs in Texas and New Mexico. This gives New Orleans and the South two transcontinental railway lines, the other being the Southern Pacific system.



## Transportation Appointments Throughout Canada.

The information under this head, which is almost entirely gathered from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

**Algoma Central and Hudson Bay Ry., Algoma Eastern Ry.**—The position of Purchasing Agent has been abolished, the duties being undertaken by F. W. ACHESON, Chief Storekeeper, Sault Ste. Marie, Ont.

**Canadian Government Railways.**—A. DION has been appointed Assistant Superintendent, National Transcontinental Ry. between Edmundston, N. B., and St. Jean Chrysostome, Que., vice H. A. Ryan. Office, Monk, Que.

**Canadian Northern Ry.**—W. PRATT, Jr., heretofore Superintendent Hotels, Sleeping and Dining Car Service, has been appointed General Superintendent, Sleeping, Dining, Parlor Cars and Hotels, Lines East and West. Office, Winnipeg.

E. TREMBLAY, heretofore Foreman, Quebec Yards, has been appointed Supervisor of Track, Lake St. John Division, Quebec Grand Division, vice J. Frigon, resigned to enter another company's service. Office, Chicoutimi, Que.

W. R. KELLY, heretofore Assistant Superintendent, Toronto Division, Toronto, has been appointed Assistant Superintendent, Ottawa Division. Office, Trenton.

H. B. SHERWOOD, Superintendent, Quinte, Kingston and Brockville Districts, Napanee, Ont., has been granted three months leave of absence.

R. S. DERBYSHIRE, heretofore Assistant Superintendent at Trenton, Ont., and S. J. KITCHEN, Trainmaster at Trenton, Ont., have returned to train service as conductors, with headquarters at Trenton and Deseronto respectively.

P. H. FOX, heretofore Chief Dispatcher, Toronto Division, Rosedale, Toronto, has been appointed Chief Dispatcher, Ottawa Division. Office, Trenton, Ont.

J. E. CATHER, heretofore dispatcher at Toronto, has been appointed Chief Dispatcher, Toronto Division, vice P. H. Fox, transferred. Office, Rosedale, Toronto.

The positions of Assistant Superintendent, Toronto Division, and Trainmaster, Ottawa Division, have been abolished.

R. A. MILLER has been appointed General Foreman, Trenton, Ont., vice W. G. Rodden.

F. McKAY, heretofore Bridge and Building Foreman, Toronto, has been appointed Bridge and Building Inspector there, vice W. H. See deceased.

W. WALSH, heretofore Supervisor of Track, Toronto, has been appointed section foreman there.

S. J. SHARP, who has a general ticket agency at 79 Yonge St., Toronto, has been appointed City Ticket Agent for the C.N.R. The company's city ticket office, at 52 Yonge Street, in charge of F. V. Higginbotham, will continue to be maintained.

A. H. DAVIS has been appointed City Passenger Agent, Winnipeg, vice G. A. North transferred.

G. A. NORTH, heretofore City Passenger Agent, Winnipeg, has been appointed City Ticket Agent, Brandon, Man., vice W. Stott on leave of absence.

A. G. HANNA has been appointed ticket agent, Portage la Prairie, Man., vice E. A. Williams.

**Canadian Pacific Ry.**—J. W. LEONARD retired from the position of Assistant to Vice President, Jan. 31, and is devoting his time to his duties as General Manager of the

Toronto Terminals Co., which will build the new Union Station, etc., at Toronto.

F. L. HUTCHINSON, heretofore Manager, Windsor Hotel, Montreal, has been appointed Manager in Chief, C. P. R. Hotels, vice Hayter Reed, from Apr. 1. Office, Montreal.

The position of General Master Mechanic, Eastern Lines, Montreal, heretofore held by C. KYLE, whose appointment as Master Mechanic, Atlantic Division, was announced in our last issue, has been abolished. His office is at St. John, N. B., not at McAdam Jct., N.B., as previously announced.

J. H. FORBES, heretofore Resident Engineer, Smiths Falls, Ont., has been appointed Resident Engineer, District 3, Montreal, vice T. B. Ballantyne transferred.

T. B. BALLANTYNE, heretofore Resident Engineer, District 3, Montreal, has been appointed Resident Engineer, Smiths Falls, Ont., vice J. H. Forbes transferred.

H. DIBLEY, heretofore Assistant Car Foreman, Transcona, Man., has been appointed Freight Shop Foreman, Fort William, Ont., vice T. E. Higgins promoted.

T. W. MARSHALL has been appointed Assistant Car Foreman, Transcona, Man., vice H. Dibley promoted.

JOHN O'BRIEN, heretofore night clerk at Sutherland, Sask., has been appointed Storekeeper, Regina, Sask., vice T. H. Horton, who has been granted leave of absence to enlist for active military service.

J. F. PLOTT has been appointed Roadmaster, Swift Current Subdivision, Moose Jaw, Sask., vice A. J. Wolfe, transferred.

A. J. WOLFE, heretofore Roadmaster, Swift Current Subdivision, Moose Jaw, Sask., has been appointed Roadmaster, Outlook Subdivision, Outlook, Sask.

R. J. COLLINS, heretofore dispatcher, District 1, Saskatchewan Division, Regina, has been appointed Chief Dispatcher, District 4, Alberta Division, Edmonton, vice W. E. Cline, transferred to Winnipeg as announced in our last issue.

W. M. ANSLEY, heretofore Trainmaster, District 2, Alberta Division, Macleod, has been appointed acting Superintendent, District 2, Alberta Division, vice F. Walker on leave of absence. Office, Lethbridge.

L. J. FISHER has been appointed District Master Mechanic, Cranbrook, B. C., vice A. Sturrock promoted.

E. RALSTON, formerly Yardmaster at Vancouver, B. C., has been appointed Yard Foreman there, on account of the former position having been abolished. By an error in our January issue it was stated that he had been appointed Yardmaster.

**Central Vermont Ry.**—J. W. WARDLAW has been appointed Assistant to the President, and Purchasing Agent, having, in addition to other duties, the charge of purchases and stores, vice J. B. Laurie deceased. Office, St. Albans, Vt.

**Grand Trunk Pacific Ry.**—W. E. MOHER, heretofore locomotive driver, has been appointed Travelling Locomotive Foreman, with headquarters at Melville, Sask.

The position of Superintendent of Water Service, at Melville, Sask., heretofore held by C. R. HEATH, has been abolished.

G. H. LAYCOCK has been appointed Locomotive Foreman at Endako, B. C., vice G. McNeil assigned to other duties.

C. E. STEWART has been appointed Locomotive Foreman, Edmonton, Alta., vice C. E. Brooks appointed General Foreman, Transcona, Man., as announced in our last issue.

O. CARLSON, heretofore Roadmaster, District 10, McBride to Prince George, B. C., has been appointed Roadmaster, District 9,

from Jasper, Alta. to McBride, B. C., vice J. Moriarty resigned. Office, McBride, B. C.

B. BRADY has been appointed Roadmaster, District 10, from McBride to Prince George, B. C., vice O. Carlson transferred. Office, McBride, B. C.

The following station agents have been appointed,—Juniata, Sask., H. F. Jones; Yorkton, Sask., G. C. Smart; Ebenezer, Sask., T. J. Shields; New Norway, Alta., T. J. Leslie.

**Grand Trunk Ry.**—F. W. WARREN, recently appointed Locomotive Foreman, Southwark Terminals, Montreal, has returned to his former position as Locomotive Foreman, Coteau, Que., vice E. B. Meehan transferred, the Southwark Terminals having been closed temporarily.

A. BEARDSHAW has been appointed Locomotive Foreman, Richmond, Que., vice G. Blackbird, retired under the pension rules.

E. B. MEEHAN, heretofore Locomotive Foreman, Coteau, Que., has returned to his former position as Locomotive Foreman, Brockville, Ont., vice F. Foster.

H. M. McPHERSON, heretofore in Division Engineer's Office, Montreal, has been appointed Assistant Engineer, Belleville, Ont., vice C. S. Ogilvie, now on active military service.

R. WOODS, heretofore Foreman Painter, Port Huron, Mich., has been transferred to the car shops at London, Ont., in a similar position.

D. ROSS, heretofore Locomotive Foreman, Southwark Terminal, Montreal, has been appointed Locomotive Foreman, Durand, Mich.

A. COPONY, Master Car Builder, Western Lines, has had his office moved from Port Huron, Mich. to Elsdon, Ill.

The following station agents have been appointed,—Gore, Que., R. Desjardins; Summertown, Ont., G. A. Butzer; Wales, Ont., J. A. McMillan; Otter Lake, Ont., H. W. Mayhew; Kingsville, Ont., outside, A. R. Keele; Stratford, Ont., outside, Feibig and Heagy.

**Intercolonial Ry.**—FRANK DUNBAR, formerly Mechanical Foreman's clerk, at Gibson, N. B., has been appointed storekeeper there, and C. L. BURGESS has been appointed Mechanical Foreman's clerk. In our January issue it was stated in error that C. L. Burgess had been appointed storekeeper at Gibson, instead of F. Dunbar.

**The Irondale, Bancroft & Ottawa Ry.** having been taken over by the Canadian Northern, and now being operated as part of the Ontario Grand Division, the positions of Superintendent, General Freight and Passenger Agent and Master Mechanic have been abolished. R. S. Derbyshire, formerly Superintendent, is running as conductor on the C. N. R., out of Trenton. W. A. Ward, formerly General Freight and Passenger Agent, is acting as accountant on the C. N. R. agents staff at Bancroft, and J. Webb, formerly Master Mechanic, is in charge of the locomotive house at Bancroft.

**Michigan Central Rd.**—L. J. BRINKMAN has been appointed Freight Claim Agent, vice J. M. Eedson resigned. Office, Detroit, Mich.

W. R. PATTERSON has been appointed General Foreman of Shops, Detroit, Mich., vice A. K. Galloway.

**National Transcontinental Ry.**—See Canadian Government Railways.

**Roberval-Saguenay Ry.**—J. FRIGON, heretofore Supervisor of Track, Lake St. John Division, Canadian Northern Ry., has been appointed Superintendent, Roberval-Saguenay Ry., Chicoutimi, Que.

**Toronto Terminals Ry.**—J. W. LEONARD, heretofore Assistant to the Vice President,



C. P. R., Montreal, has been appointed General Manager, Toronto Terminals Ry. Co., which has been incorporated to build the new Union Station, etc., in Toronto, and he will open an office at 38 King St. East, in the near future.

**Wabash Rd.**—G. B. INGERSOLL, heretofore Westbound Agent, Chicago, Ill., has been appointed Local Freight Agent there.

**W. BOCKSTAHLER**, heretofore Travelling Freight Agent, Buffalo, N. Y., has been appointed Westbound Agent, Chicago, Ill., vice G. B. Ingersoll promoted.

**H. EICKE** has been appointed Superintendent Transportation, vice F. E. Bolte resigned to accept service elsewhere. Office, St. Louis, Mo.

**J. L. HARRIS** has been appointed General Live Stock Agent, in full charge of live stock and live poultry traffic. Other duties will also be assigned to him in connection with the handling of packing house products and perishable freight. Office, Kansas City, Mo.

**E. E. STOWELL**, heretofore Travelling Freight Agent, Rome, Watertown and Ogdensburg Rd., has been appointed Travelling Freight Agent, Wabash Rd., Buffalo, N. Y., vice W. Bockstahler promoted.

### Traffic Orders by the Board of Railway Commissioners.

#### Special Rates for Farmers' Conventions.

Jan. 5. The Board has refused the application of A. Roy for an order directing railway companies to issue tickets at a special rate of 1c. a mile to farmers desiring to attend agricultural conventions, conferences and exhibitions. In concluding his judgment the Chief Commissioner said:—"Under the Act, it is, of course, impossible for the Board to order special privileges for any one class. To do so would be to directly violate the provisions of the Act. It is not open to the Board to consider whether a farmer or a doctor, on the one hand, should or should not travel cheaper than a mechanic or a lawyer on the other."

#### Freight on Mixed Carloads of Grain Products and Hay and Straw.

23153. Jan. 13. Re application of the Central Convention of Farmers' Institutes of British Columbia, for an order to grant the privilege of shipping mixed carloads of flour and feed (in sacks) and baled hay and straw at carload rates. Upon hearing the application in Vancouver, Oct. 27, 1913, in the presence of counsel for the C. P. R., no one appearing for the applicants, and reading the report of the Chief Traffic Officer of the Board—it is ordered that the application be refused.

#### Joint Rates for Shingles Over Western Canada Power Co.'s Ry. and C. P. R.

23213. Jan. 26. Re application of Stoltze Manufacturing Co. for an order requiring joint rates to be charged on shingles over the Western Canada Power Co.'s Railway and the C. P. R. It is ordered that the C. P. R. and the Western Canada Power Co. jointly publish and file supplements to the C. P. R. Special Joint Tariffs, C. R. C. Nos. W-1615 and 1806, providing joint rates from the applicant's mill to the destinations shown in the said tariffs, via Ruskin, B. C., which shall not exceed the rates from Ruskin by more than 2 cts per 100 lbs.; the W. C. P. Co. to receive 3 cts per 100 lbs. as its proportion of the joint rates so made.

#### Suspension of Tariffs Increasing Freight Rates.

23231. Feb. 2. Re certain freight tariffs published and filed by the New York Central Rd. and the Ottawa & New York Ry. increasing the rates to be charged between

stations in Canada. It is ordered that the said tariffs, in so far as they increase the rates now being charged from stations in Canada to stations in Canada, be suspended until further ordered by the Board.

#### Suspension of Boston & Maine and Maine Central Tariffs.

23232. Feb. 2. Re certain freight tariffs published and filed by the Boston & Maine and Maine Central Railroads. It is ordered that said tariffs, in so far as they increase the rates now being charged between stations in Canada, be suspended until further ordered by the Board.

#### Switching Charges at Fort William.

23281. Feb. 9. Re application of Fort William, Ont., Board of Trade, for abolition of charge of 1 ct. per 100 lbs., minimum \$5 a car, for switching goods for or from steamboats between sidings and docks at Fort William, as shown in C.P.R. tariff, C.R.C. no. 17, 1919, page 6. It is ordered that the application be refused.

#### Rates from Head of Lake Superior.

23282. Feb. 10. Re application of Fort William, Ont., Board of Trade, for an order requiring the railway companies to lower all rates from the head of the lakes to points west  $2\frac{1}{2}$  cts. per 100 lbs., and to make the tariffs read 'Rates are exclusive of wharfage at Fort William, Port Arthur and West Fort.' It is ordered that the application be refused.

#### Standard Regulations re Opening of New Lines.

General order 134. Jan. 25. Re amendment of the Board's standard regulation as to the opening of new lines, so as to provide that, in addition to filing the standard mileage tariff applicable to traffic on the portion of the railway to be opened, the appropriate special tariffs also be filed. It is ordered that railway companies making application to open for traffic under sec. 261 of the Railway Act (as distinct from obtaining, under subsec. 7, as amended, of the aforesaid section, leave to carry traffic where, because of the needs of settlers or other urgent condition, public convenience will be served thereby,) be, required, before opening for the carriage of traffic any extensions of their existing railway systems west of Lake Superior, to publish and file the appropriate supplementary special class or "town" tariffs, mileage commodity tariffs, and special tariffs on grain to the Lake Superior terminals, and on lumber from British Columbia, as these may be applicable to the territories to be served by the said new lines, in addition to the standard mileage tariffs therefor.

**The Asbestos & Danville Ry.**, the freight tariffs of which have been approved recently by the Quebec Public Utilities Commission, is about 4.4 miles long, connecting the village of Asbestos, Que., with the G.T.R. at Danville. It carries freight only, and has 2 locomotives, 1 freight car and 10 dump cars. T. F. Mannville is President, and J. R. Pearson, General Manager. It is a subsidiary of the Asbestos & Asbestos Co., Ltd., which has its headquarters in London, Eng., and its Canadian office at Asbestos, Que.

**Full Crew Laws.**—Efforts will be made to bring about repeal of the full crew laws in Pennsylvania and New Jersey at the present sessions of the legislatures in those states. Thirteen railways operating in the two states have joined together to make a public appeal to the people for their support in accomplishing this object.

The C.P.R.'s downtown freight office in Vancouver is being removed from 440 Hastings Ave. to the new station.

### Grand Trunk Railway Betterments, Construction, Etc.

**Lachine, Jacques Cartier and Maisonneuve Ry.**—The Board of Railway Commissioners, on Feb. 15, granted the company permission to carry its tracks over those of the Montreal Tramways Co., to connect its projected line with the G.T.R. near Jacques Cartier Jct.

**Track Elevation in Montreal.**—The consideration of the question of the enlargement and modernization of the Wellington St. subway has been postponed until the general plan of G.T.R. track elevation from Bonaventure Station to St. Henri is settled.

**Peterborough and Chemong Lake Branch.**—The City of Peterborough is asking the Ontario Legislature to authorize the making of an arrangement with the G.T.R. for a lease to the Canadian General Electric Co. of a portion of the right of way of the Peterborough and Chemong branch line, as a right of way for a testing track for electric locomotives. This branch line extends from Peterborough to Bridgenorth, and has not been operated for a number of years.

**Hamilton Improvements.**—It is said that some considerable improvements are to be made at the King St. station in the near future. The matter was discussed between J. H. Gordon, G.T.R. Superintendent, and the city officials, Jan. 30. The question of building the subway at Kenilworth Ave. was also discussed.

**Guelph, Ont.**—Press reports state that arrangements are being made for the establishment of a divisional point at Guelph. (Feb., pg. 64.)

**The G. T. R. is reported to have taken special precautions for the safeguarding of its shipping facilities at Portland, Me., and its railway bridges and connections between that point and the International Boundary, in view of the report that a plot had been formed in California, to destroy the same, and that four men were on their way to carry it out.**

**The Intercolonial Ry. Efficiency Association** at its usual monthly meeting, at Sydney, N. S., Feb. 7, dealt with a number of questions under the operating rules relating to train operation. A. C. Barker, Inspector of Stations, Trains and Train Dispatching, Canadian Government Railways, attended, and explained a number of the details which were not clearly understood.

**An Arbitration Board** has been appointed, consisting of Justice Hyndman, Edmonton, Alta., Chairman, and O. M. Biggar, K.C., and Wm. McAdams, Edmonton, to enquire into the dispute between the Edmonton, Dunvegan and British Columbia Ry. and its shop employees at West Edmonton. The trouble relates to a proposed reduction in wages.

**The Quebec Cartage and Transfer Co.'s** annual meeting was held at Quebec, Feb. 9. The officers and directors for the current year are: President, Hon. R. Turner; Vice President, C. J. Baillargeon; other directors, Hon. A. Turgeon, H. D. Barry, Jules Hone, J. T. Ross and N. Belleau. R. L. Jess is Manager.

**The Toronto, Hamilton and Buffalo Ry.** Freight Department held its seventh annual dinner at Burlington, Ont., Feb. 10. Addresses relating to railway work were given and discussed.

**Central Railway & Engineering Club of Canada.**—C. McNair, representative, Galena Signal Oil Co., read a paper on lubrication before the club at Toronto, Feb. 23.



# Canadian Railway AND Marine World

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## General Construction Work on Western Lines.

Grant Hall, Vice President and General Manager, Western Lines, C.P.R., has made the following statement regarding the works undertaken by the company during recent years:—"Since 1908 the C.P.R. has in the West taken over for operation 3,088 miles of new lines. These figures include the portion of the Kettle Valley Ry., from Midway to Merrit, which we will probably commence to operate under lease during next summer. In the same period we have taken over for operation 789 miles of second track, and have completely rebuilt the lines between MacLeod and Lethbridge, Alta., and between Field and Hector, B.C. Practically every terminal we have has been rebuilt, including Vancouver. A new terminal has been built at Transcona, and a double track cut-off constructed around the city of Winnipeg. We have built very large high level bridges at Lethbridge and Edmonton, and have built new passenger stations at many points, notably Fort William, Regina, Calgary, Edmonton, Banff, Lake Louise and Vancouver. The Ogden shops have been built, hotels constructed at Calgary and Balfour, and extensive additions made at Banff, Lake Louise, Winnipeg and Vancouver hotels. This brief survey of work done does not include extensive improvements to the track and roadbed, but will sufficiently demonstrate the fact that the past seven years have been busy ones.

"It would hardly be expected that the work of construction and reconstruction would continue at such a breathless pace, and the quieter business conditions will be reflected this year in our programme. It is the intention to push ahead vigorously the work on the Rogers Pass tunnel, the magnitude of which is probably not fully grasped by many. The task of piercing the Selkirks is one of the most formidable we ever tackled, but is progressing most favorably. Its progress is being watched with interest by engineers all over the world, as special problems have been met, and, we believe, satisfactorily solved. The extensions to Winnipeg station will also be pushed vigorously, and the general scheme will now begin to unfold itself day by day as the work progresses. It is our intention to spend a considerable sum on betterments on operated lines, notably in the way of building stockyards at small centres. This we are doing with a view to the encouragement of mixed farming and stock raising, in which we are greatly interested. We are not pressing this year the construction of new lines or double tracking, outside of the Rogers Pass tunnel, which is a part of our general scheme of double tracking, but if crop prospects and other business conditions appear favorable early in the summer, there may be some revision of our estimates in connection with such work."

The Largest Simple Locomotive yet built has been delivered at the Panama Pacific Exposition grounds at San Francisco, where it forms part of the exhibit of the Chicago, Burlington & Quincy Rd. It is 88 ft. long over all, weighs 206.9 tons and is fitted with automatic stoking apparatus, both steam and air power reverses and electric generating set. It was accompanied across the continent from Philadelphia by an attendant who converted the tender into temporary quarters with separate cooking and sleeping apartments. Hauling it as freight cost more than \$1,000 and the journey occupied 37 days owing to the necessity of routing it over lines whose curves were not too sharp for its long rigid wheelbase.

## Rogers Pass Tunnel Construction Pro- gress.

Following is the footage made in January for the headings in the C. P. R. Rogers Pass tunnel:

East end centre heading, 443 ft., schist and quartzite.  
East end pioneer heading, 594 ft., schist and quartzite.  
West end centre heading, 701 ft., slate and quartzite.  
West end pioneer heading, 932 ft., slate.

The latter is 122 feet over the American record established by the Canadian Northern Mount Royal tunnel heading, and will probably stand as the new American record for many years. A. C. Dennis, M. Can. Soc. C. E., is Superintendent for the contractors, Foley Bros., Welch & Stewart. Jos. Murphy is Assistant Superintendent on east end, and Jos. Fowler is Assistant Superintendent on west end, with W. Fowler and J. Young as walkers and A. Adams, J. Stewart and D. Hamer as shift foremen on pioneer heading.

G. H. King, Car Inspector, G.T.R., Palmerston, Ont., writes: "I think Canadian Railway and Marine World is a good publication for any railway man."

T. McHattie, Master Mechanic, G. T. R., Montreal, in renewing his subscription, writes:—"I find the matter contained in Canadian Railway and Marine World interesting and instructive each month, in fact more so than in any other technical journal that comes to me. I wish you continued success."

The Manitoba Public Utilities Commission has issued six orders affecting the Winnipeg Electric Ry. The first provides for the purchase of a sufficient number of fire hose, bridges for use on the tracks at fires, and also that such bridges shall be carried by the fire apparatus so as to be available for use by the street cars at all times. The second provides for the regulation of the company's employees' watches; the third for the inspection and control of waiting rooms and shelters; the fourth that the company shall so arrange signs on the front and side of cars so that the immediate destination of the cars shall be shown; the fifth that cars going to the barns shall be indicated, but passengers may ride in such cars; and the last order relaxes the previous order relating to the measure of protection to be afforded at the St. James St. subway by directing the installation of the General Railway Signal Co.'s light signal. The company is asking for a reconsideration of the fourth order.

Toronto Ry. Stub Line Operation to Exhibition Camp.—During the Canadian National Exhibition at Toronto each autumn the Toronto Ry. operates its cars along Danforth St. to the Exhibition Park, from Queen and King Sts. Latterly the park is being used as a military camp and training ground, and a section of the local press has been castigating the company for not operating a service over the line. Following this the City Council wrote to the Ontario Railway and Municipal Board, calling its attention to the lack of service and asking for an order for such service to be put in force forthwith. The Board took the matter up with the company, from which a reply was received to the effect that no application had ever been made for the service until the Board brought it up, that the company had previously offered to put on such service, and all the Board need do was simply to mention it in order to obtain what was desired. The company's position in this matter was grossly misrepresented by the local press.



### Canadian Northern Railway Construction, Betterments, Etc.

**Montreal Tunnel and Terminal Co.**—Sir Donald Mann, Vice President, is reported to have stated, after a recent inspection of the work at the tunnel under Mount Royal, Montreal, that at the present rate of progress it will be completed to the full double track width by the end of April, and will be ready for operation in the early autumn. The power house at the back of the tunnel is reported completed, and the erection of the Mount Royal Heights station is being proceeded with.

**Montreal-Ottawa-Port Arthur Line.**—The work of finishing up the stretches of the line from Montreal to Hawkesbury, and from Ottawa to Capreol, are being proceeded with, and it is expected to have the whole of this ready for the through operation of trains by the autumn.

It is expected that a through train service will be put in operation between Toronto and Port Arthur in June. There is a train service already in operation from Toronto to Ruel.

**Ontario-Niagara Connecting Bridge Co.**—The President of the United States has signed a measure providing for the building of a bridge across the Niagara River, just north of Niagara Falls, N.Y. F. A. Dudley, Niagara Falls, N.Y., is one of the incorporators. The Dominion Parliament is being asked to incorporate a company for the Canadian part of the undertaking. The Canadian Northern Ry. interests are said to be behind the project.

**Canadian Northern Ry.**—Following the defeat of the C.N.R. bylaw by the ratepayers at the January municipal elections, negotiations were opened for a compromise, and the Mayor reported that M. H. MacLeod, General Manager, and other officers, were going to Port Arthur to discuss the situation, and he hoped that the new proposals to be made would result in a settlement being effected.

A press report, Feb. 15, states that work was begun that morning on the extension of the coal dock controlled by the company at Port Arthur. The work to be done includes the placing of solid concrete abutments for foundations at the coal hoists, and the facing of the dock with concrete. The cost is estimated at \$30,000. The contractors are the Barnett and McQueen Co.

The Manitoba Legislature is being asked to increase the capital stock of the Winnipeg River Ry. Co. from \$50,000 to \$500,000. This is a subsidiary of the C.N.R., and has power to build a line from Lac du Bonnet along the Winnipeg River valley for 10 miles.

The Board of Railway Commissioners has authorized the opening for traffic of the line from a junction with the Camrose-Strathcona line to a junction with the Edmonton, Yukon and Pacific Ry. at Strathcona, Alberta, 0.6 of a mile.

**Canadian Northern Pacific Ry.**—The last rail on the line between the B. C. eastern boundary near Yellowhead Pass and Port Mann, was laid Jan. 25, at Basque, on the North Thompson River, 188 miles north easterly from Port Mann. It is expected to have the ballasting and other work so far completed by May 1 that the formal ceremony of driving the last spike may take place then, though possibly a through train service will not be started until July or August. All the bridges, with the exception of that at Wallachin, have been completed, and a temporary bridge has been erected there.

Nothing definite has been settled as to the construction of the line from Port Mann to the False Creek terminus in Van-

couver, 15 miles. According to the agreement with the Vancouver City Council, all the terminal work has to be completed within five years from the signing of the document, about two years ago. The company owns about 164 acres at the upper end of False Creek, and is reclaiming about 60 acres of the creek. It has erected a large bulkhead for 1,500 ft. easterly from the Morris St. bridge, then 2,000 ft. southerly, behind which has been pumped about 1,000,000 cubic yards of sand. A large culvert for drainage purposes has been constructed to deep water. This work of continuing the filling in was restarted Feb. 1, but nothing has been decided as to the actual start on building the permanent sea wall. The Vancouver City Council has passed a resolution urging the immediate putting in hand of this work.

The members of the British Columbia Legislature were given a special trip over the section of the C.N.P.R., from Port Mann to Cisco, 140 miles, Feb. 12. T. H. White, Chief Engineer; D. O. Lewis, Divisional Engineer on Vancouver Island; and J. M. Mercer, engineer for the Northern Construction Co., accompanied them.

The British Columbia Minister of Finance, replying to a question in the Legislature, Feb. 1, said none of the Canadian Northern Pacific Terminal bonds guaranteed by the Province had been hypothecated, but bonds to the value of \$1,770,000 had been sold, realizing \$1,645,577. The prices realized ranged from 92 to 95%. The following amounts had been expended upon terminals:—Port Mann, \$337,420.88; New Westminster, \$1,370,642.42; Vancouver, \$148,045.05; Steveston, \$201,715.85; Patricia Bay, \$898.57; total, \$2,148,722.77. (Feb., pg. 60.)

### National Transcontinental Railway Construction.

The total track mileage of the N.T.R. is as follows:—Main line, Moncton, N.B., to Winnipeg, Man., 1,803.42 miles; second track and line from Quebec to site of Quebec bridge, 20.79 miles; sidings and yards, 423.26 miles; total track mileage, 2,247.47. The total cost of the line, to Mar. 31, 1914, as stated in the ninth annual report of the Commissioners, was \$142,967,999.02, which does not include interest on capital expenditure, nor any expenditure made by the Government on the approaches to the Quebec bridge, before that work was taken over as a part of the N.T.R. undertaking. At that date the steel bridges on the line were 97.2% completed, the Quebec bridge being regarded as a separate undertaking. Since the date of the report, the bridge work has been practically finished, and the other finishing up work has been practically completed. The fitting up of the shops and the provision of other equipment for operation is being proceeded with.

We are officially advised that the contract for the erection of nine travelling cranes for the Leonard shops, Quebec, has been awarded to the Dominion Bridge Co., Montreal.

The estimates for this year, which have been laid before the House of Commons, include the following items:—N.T.R. construction, \$5,000,000; Quebec Bridge construction, \$3,500,000, and towards the construction of a railway to connect Montreal with the National Transcontinental Railway, \$750,000 (revote). (Jan., pg. 19.)

Divisional shop forces on railways have demanded a considerable reorganization during the past few years with the advent of the newer types and arrangement of running gear and valve motions, from a resultant new maintenance situation.

### Great Northern Railway Lines in Canada.

**Vancouver, Victoria and Eastern Ry. and Navigation Co.**—J. H. Kennedy, Chief Engineer, visited St. Paul, Minn., Feb. 6, to consult A. H. Hogeland, Chief Engineer, G.N.R., in connection with the Hope Mountain and other sections of the line at present under construction. The first section connects up the already constructed part of the line with the Hope Mountain section, which is being built by the Kettle Valley Ry. for joint use. The line from Hope to a junction with the Canadian Northern Pacific Ry. has already been built, and the V. V. & E. Ry. operates over that line to New Westminster, where connection is made with its own lines to Vancouver, Port Guichon and the ferry to Vancouver Island, and the line formerly known as the New Westminster Southern Ry. to the U.S.

**Vancouver Terminals.**—R. Budd, Assistant to the President, G.N.R., and G. R. Martin, Comptroller, left Vancouver, B.C., Feb. 4, after having spent some time there in discussing the False Creek terminal plans. The agreement with the city provides for the erection of station buildings, the laying out of yards and other terminal facilities by the end of 1916. Up to the present time, several hundred acres of the False Creek flats have been filled in under the terms of the agreement, and the visit of the company's officials had to do with the arrangements for starting building operations. The city council passed a resolution calling upon the company to proceed with the building of the station and the laying out of the terminal yards at once. (Feb., pg. 61.)

**Canadian Shipping and the German Submarine Menace.**—In common with the ship owners of Great Britain, those of Canada, while appreciating the possibility of some damage to their vessels, or even an occasional total loss, are not in any sense panic stricken, at the recent German threat to carry on a wholesale attack against all vessels trading to and from Great Britain and Ireland. The consensus of opinion amongst Canadian shipowners is that there is no more danger than there was a month ago.

**The United States and the Proposed Purchase of Interned Foreign Steamships.**—In connection with the ship purchase bill which Congress has passed recently, the U. S. Secretary of the Treasury has stated that in view of false rumors and statements he deems it advisable to say that at no time had a communication from, or discussion with any banking house or institution, in or out of the U.S., been had, in connection with the purchase, sale or disposition in any manner whatsoever, of the German vessels interned in U. S. ports or elsewhere, or in connection with any other vessels of belligerent or neutral nations for any purpose whatever.

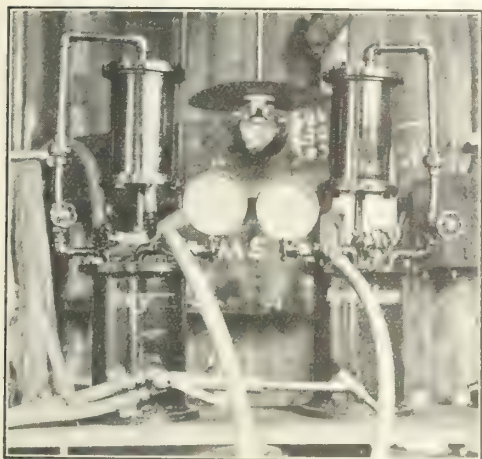
**British Government Sells German Vessels.**—In accordance with the recent announcement, the British Government has sold five of the German vessels captured since the commencement of the war. The vessels, their purchasers and the amounts realized, are as follows:—Schlesien, Thomas Sons and Co., London and Liverpool, £65,200; Ulla Boog, J. W. Baird and Co., West Hartlepool, £23,150; Marie Glaeser, J. W. Baird and Co., West Hartlepool, £13,225; Franz Horn, F. Jones and Co., Cardiff, £11,600; and Nauta, Roberts and Cooper, Brierley Hill, £12,550. Later, another German vessel, Wilhelm Behrens, was sold to A. Calbert, Goole, for £11,550. Under the conditions of sale, only 25% of the purchase price need be paid immediately, the balance being spread over three years at 4%.



# Electric Railway Department

## Portable Oxy-acetylene Plant in Dominion Power and Transmission Co.'s Shops.

A portable oxy-acetylene plant for general shop use, a view of which is shown herewith, was built in January for service around the Dominion Power and Transmission Co.'s shops, at Hamilton, Ont. There are two distinct generators, both of the same size and design, one for generating acetylene, and the other for oxygen. Each generator consists of a lower cylinder made of 6 in. steel tubing, flanged top and bottom, and with cover plates, and a similar cylinder of 4 in. steel tubing, flanged and with cover plates mounted above. The lower cylinder is the generator, and the upper cylinder, the water reservoir. In the lower cylinder, there is a basket arrangement containing the chemicals from which the gases are generated. Between the two cylinders there is a  $\frac{1}{4}$  in. pipe, with globe valve, which permits the water to trickle down in the desired quantity from the water reservoir above. Connecting the tops of the two cylinders, there is a  $\frac{1}{4}$  in. pipe by-pass, with globe valve, by opening which the pres-



Portable Oxy-Acetylene Outfit.

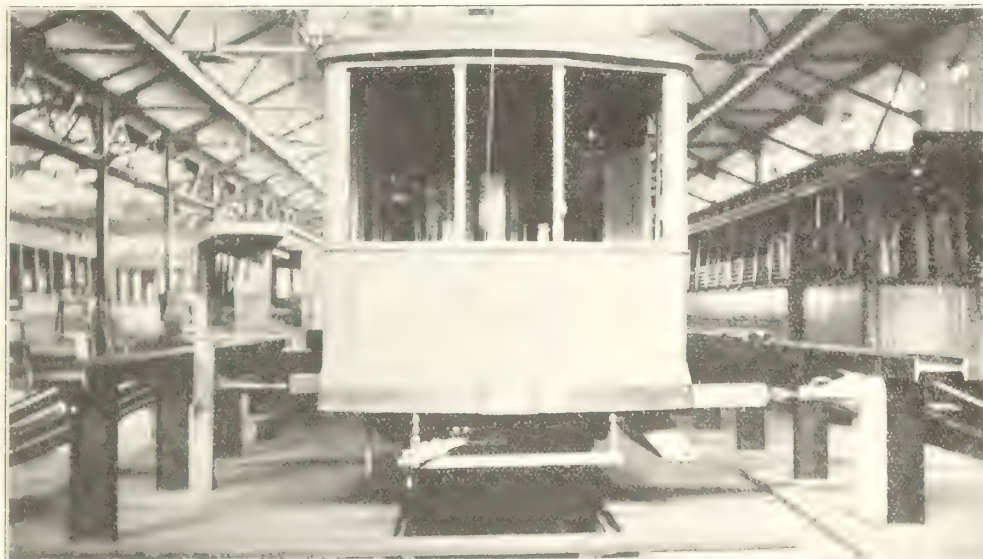
sure in the two cylinders is equalized, thereby permitting the water to drain out of the reservoir. Attached to the top of the lower cylinder, there is a small pressure gauge. The gas is drawn off through the top of this cylinder.

For generating the oxygen, peroxide of sodium is used, and for the acetylene, calcium carbide, the combination of water with each of which produces the respective gases. The baskets in each of the lower cylinders are filled by removing the lid of the lower cylinder. Similarly with the water above. The two gases are combined in a torch, which communicates with the cylinders by a rubber hose. We are indebted to J. O. Binkley, Shop Superintendent, for this information.

The Board of Railway Commissioners has approved a clearance of  $7\frac{1}{4}$  ins. for the poles on the electrified London and Port Stanley Ry. This applies to the 150 poles already erected, the clearance for the balance of the poles has been approved at  $7\frac{1}{2}$  ft. The Board's standard regulations for clearance of this kind calls for 8 ft. between the trolley wire and the pole, but owing to the great expense necessary to meet this change, a special privilege has been granted in this case.

## Car Straightening Frame, Montreal Tramways Company's Shops.

In the M. T. Co.'s new shops at Youville, a suburb of Montreal, which were described in Canadian Railway and Marine World, Mar. 1913, provision was made over one of the row of car hoist pits, for a car straightening frame, to remove any warps or bends which might develop in the steel equipment used, through collisions or accidents. This frame, with a car in it, is shown in the accompanying illustration. The frame consists of a row of five I beam posts set vertically in the concrete floor about 8 ft. each side of the car track, rising to a height of about  $3\frac{1}{2}$  ft., with a similar heavy I beam extending along the top of these vertical posts, overhanging slightly at the end posts. The car body to be straightened is run in on the track, and by means of screw jacks and blocking from these posts applied at the required points on the car frame, the body can be straightened out. We are indebted to D. E. Blair, Superintendent of Rolling Stock,



Steel Car Straightening Frame in Montreal Tramways Co. Shops.

Montreal Tramways Co., for this information.

The new requirements of steel equipment in maintenance, have been felt by both electric and steam roads, different methods being required to keep the equipment in a state of repair. Steel equipment, when injured, usually bends or twists, whereas similar shocks to wooden equipment tend to break the frame members, requiring replacement. For straightening out the steel frame box cars now in general use on the system, the C.P.R. has in service at least two frames, one of which was described in Canadian Railway and Marine World, Nov. 1913.

**Experiments with Front End Collection.**—Desiring to get its cars through the congested district in shorter time during rush hours, between 4 and 6 p. m., the Detroit United Ry. is experimenting with the front end collection system and finds it is working satisfactorily. Passengers who have the exact fare ready board the car in the front, but when transfer tickets or change are required the passengers must board the car in the rear.

## Overcrowding on the Toronto Railway.

The conviction of the Toronto Ry. Co., in Nov., 1914, for overcrowding its cars, when sentence was suspended pending the disposition of a stated case in the Appeal Court, has been responsible for the preparation of a draft bylaw by the company for the approval of the Ontario Railway and Municipal Board, limiting the number of passengers which the company may carry on any of its cars. Following is the draft of the bylaw as submitted to the Board:—

"Whereas complaints have been made that the cars of the company in operation in the city of Toronto have been overcrowded, and whereas the company is desirous of avoiding overcrowding upon its cars, and of regulating the number of passengers to be carried thereon, and whereas the City Council on May 4, 1895, adopted the following recommendation of the City Engineer:—

"I beg to recommend and determine, under the requirements of clause 38 of the contract and agreement between the Toronto Ry. Co. and the city, that the carrying capacity of closed cars be limited to 50% above the seating

capacity (allowing a space of 18 ins. on the seat for each person), and that open cars be limited to their seating capacity. In order to avoid disputes, notices should be placed in each car, stating the exact number of passengers it is allowed to carry."

"Be it therefore enacted, That in the operation of the company's railway, that the carrying capacity of closed cars be limited to 50% above seating capacity (allowing a space of 18 ins. on the seat for each person), and that the carrying capacity of open cars be limited to the seating capacity."

The Board at a sitting on Feb. 12 approved of the draft on the understanding that the bylaw be redrafted, that it do not become operative until a date to be fixed, and that the company adopt a device to show when the cars are full. This decision was given by the Chairman, D. M. McIntyre, K.C., with the concurrence of H. N. Kitson, the Vice Chairman, A. B. Ingram, dissenting. The Chairman said that it was clearly the company's duty to carry out the law as indicated by the courts and it was the Board's duty to support the company in doing so. The question came up as to whether it was practicable to enforce this bylaw, and whether there should not be certain physical barriers or mechanical devices. The disposition was



to approve the bylaw subject to the condition that immediately on it coming into force similar machinery should be devised notifying the public when, in the opinion of the officials and the company operating the car, the car was legally full, and if it is found that the company reports or the city reports that it is impossible to enforce the bylaw, resting merely on a notification to the public that the car is full, and trusting to their obedience and instinct not to violate the bylaw, then the Board must reserve to itself the right to require the company to adopt some physical means, the erection of gates or barriers of some kind controlled by the employee in charge of the car.

Vice Chairman Ingram, in dissenting, said: "I have satisfied myself that unless gates or doors are provided, worked by motormen or conductors, it is utterly impossible to carry out this bylaw without creating a good deal of dissatisfaction. As soon as the company makes these alterations in its rolling stock, I am quite willing to support a bylaw of this character. I would be glad indeed if that could be done as soon as possible. Otherwise I cannot see my way to support this bylaw at this particular stage."

### The London Street Railway Company's Annual Report.

The 40th annual report for the calendar year 1914 shows the following results:—

	1913.	1914.
<b>EARNINGS:—</b>		
Passengers .....	\$327,075.64	\$370,915.62
Miscellaneous .....	4,890.92	4,979.66
Gross earnings .....	\$331,966.56	\$375,895.28
<b>EXPENSES:—</b>		
Maintenance:—		
Way and Structures ..	\$26,539.70	\$31,732.73
Equipment .....	30,306.91	34,669.66
Transportation:—		
Power .....	45,992.83	42,291.79
Car service .....	99,817.00	123,796.29
General .....	32,260.15	35,410.36
Total operating expenses ..	\$234,916.59	\$267,900.83
Net earnings .....	\$97,049.97	\$107,994.45
Interest on bonds .....	\$28,848.00	\$31,908.59
Interest on overdraft ..	265.79	40.35
Total Deductions ....	\$29,113.79	\$31,948.94
Net income .....	\$67,936.18	\$76,045.51

\$47,911.77 was expended in construction and equipment.

#### COMPARATIVE STATISTICS.

	1913.	1914.
Expenses, per cent. of earnings	70.07	71.02
Net income, per cent. of capital .....	12.22	13.6
Passengers carried .....	1,462,562	1,697,963
Receipts per passenger ..	3.12c	3.09c
Car mileage .....	1,583,840	1,908,175
Gross earnings, per car mile	20.96c	19.69c
Operating expenses, per car mile .....	14.83c	14.03c
Net earnings, per car mile ..	6.13c	5.66c
Miles of track .....	34.97	35.19
Net earnings, per mile of track .....	\$9,492.89	\$10,681.88

The directors for the current year are:—E. W. Moore, Cleveland, O., President; T. H. Smallman, London, Ont., Vice President; P. W. D. Broderick, Toronto; Sir Herbert Holt, Montreal; W. M. Spencer, C. H. Ivey and C. B. King, London, Ont. The only change made was consequent on the retirement of H. A. Everett, Willoughby, O., who has been President for many years, his place on the board being taken by C. B. King, Manager. G. G. Holding is Secretary-Treasurer.

## Toronto and Its Electric Railway Franchises.

Following on the declaration of the Mayor of Toronto in his inaugural address to the City Council recently, and the recent judgment of the Imperial Privy Council in connection with the Toronto Suburban Ry. Co.'s appeal relative to track repairs on its Davenport Road line within the city limits, the city is applying to the Ontario Legislature for legislation declaring that the true meaning of the agreement of Sept. 4, 1899, between York Tp., and the Toronto Suburban Ry. Co., as set forth in chap. 124, Vic. 63, is that the company is obliged to keep clean and in proper repair and to build a new roadway or pavement on the part of Bathurst St. and Davenport Road, occupied by and between the rails and for 18 ins. on each side of the rail or rails, and that such new roadway or pavement shall be of a character similar to that built or to be built upon the other portion of the said highways by the municipality having jurisdiction over said highways, and that in default of the company keeping clean and in proper repair, and building a new roadway or pavement on the portion of the said highways when requested to do so by the city the work may be done by the city at the company's expense. It is also desired that a declaration be made that the word "tracks" wherever used in the agreement shall include the roadway or roadbed on which the rails are placed, between the rails and 18 ins. outside of each rail. The effect of this legislation would be to nullify the judgment of the Privy Council, as published in Canadian Railway and Marine World for February, which stated that the Ontario Railway and Municipal Board had no jurisdiction to make an order on the company to lay a new pavement of a kind which did not exist and was not provided for when the agreement was originally entered into, and the Supreme Court of Ontario was wrong in affirming that order. As to the interpretation of the word "tracks," the Lord Chancellor said that they could not give the wide meaning placed on it by the lower court, which extended it not only to the rails, but to the ground occupied not only between the rails but up to 18 ins. on each side, and they think that the words in the section referred to indicate an interpretation of a more restricted and literal kind and exclude the general roadway itself as distinguished from the rails, etc., laid upon it.

Authority is also being asked for the city to expropriate and take over the portion of the Toronto Suburban Ry. and the company's real property within the city limits and such personal property in connection therewith, as the Ontario Railway and Municipal Board may fix, upon payment of its value to be determined by arbitration by the Board, and that in determining such value, the franchise or control of the tracks upon the highways shall not be estimated as of any value whatever, and also to declare that the Toronto Suburban Ry. Co.'s rights and privileges to operate railways or to exercise any other franchise rights within the city limits are cancelled and forfeited.

So far as the Toronto Ry. is concerned, the Legislature is being asked to declare that the proper construction of the agreement between the City of Toronto and G. W. Kiely, of Sept. 1, 1891, as set forth in chap. 99, Vic. 55, and the award, conditions and bylaw attached thereto, is that in respect to what new lines shall be established and laid down and tracks and services extended by the company, whether on streets in the city as existing at the date of the agreement or as afterwards extended, it is for the city and not the company to determine and direct what new lines shall

be established and tracks and services extended, and further that the privilege to the city to grant to any person or company for failure of the company to establish new lines and open same for traffic, is not the only remedy the city can claim, but it may, in addition, build and operate such lines, and that the company shall pay the cost of construction and operating, and that the city may collect such cost by distress on the company's property, and for imposing a penalty of \$1,000 a day for failure to comply with the requirements of any such bylaw as above provided for. Authority is also being asked by the city to compel the Toronto Ry. Co. to build and equip 13 miles of new track within the city limits and to build and place in operation 180 new cars to afford adequate and proper street car accommodation for citizens.

The city is also applying for an amendment to the Ontario Railway Act to provide that no greater sum than 5c may be charged on any street railway as fare within the limits of an urban municipality, and also for such legislation as may be necessary to provide that 5c. be the maximum fare upon the Metropolitan Ry. to and from points within the city limits. On the Toronto and York Radial Ry.'s Metropolitan Division there are four miles of the line within Toronto city limits, the fare to the farthest point being 7c.

The question of the Toronto Ry. building approximately 13 miles of new track, along with other recommendations as to connections and track repairs, with additional new and rebuilt cars, was dealt with in a report on the conditions made, at the instance of the Ontario Railway and Municipal Board, by C. R. Barnes, and summarized in Canadian Railway and Marine World for July, 1914. The Board's opinion or judgment on this was published in full in our Dec., 1914, issue. The matter came before the Board again, Feb. 9, when the company applied for an extension of the time within which it may carry out some of the work recommended. The time for the construction of the new tracks was extended to July, but the time for equipping 50 new cars was not extended beyond that originally set, viz., June 1. The company's counsel stated that the cars could not be completed by the time stated and he would have to ask for an extension later. Lack of available funds for the work was given as the chief cause of the inability to comply with the Board's requirements.

### Ottawa Traction Co.'s. Annual Meeting.

This company's first annual meeting was held in Ottawa, Feb. 1. The report, including the Ottawa Electric Ry. Co.'s operations, which appears in full on pg. 118 of this issue, shows that notwithstanding the business stringency during the greater portion of the year, and the war during the last five months of it, every month showed an increase in gross receipts, the net earnings also increasing.

The directors were re-elected.

The percentage of operating expenses to gross receipts, compares as follows, for various years,—1899, 57%, 1900, 57%, 1901, 63%, 1902, 60%; 1903, 61 4-5%; 1904, 62%; 1905, 59 2-5%; 1906, 57 4-5%; 1907, 59 4-5%; 1908, 66 2-5%; 1909, 63 1-2%; 1910, 63%, 1911, 57 2-5%; 1912, 57 1-5%; 1913, 60 2-5%; 1914, 60 3-5%.

Following is a comparison of the number of passengers carried:—1894, 2,797,281; 1904, 8,717,205; 1914, 25,321,547.



## Toronto Railway Co's. Annual Report.

The report for the calendar year 1914, presented at the annual meeting, Feb. 3, says that the operations for the year do not show the usual increases, but when taking into consideration the conditions which prevailed in the early part of the year, when business generally was suffering from general depression, and latterly from the effects of the European war, the results must be considered satisfactory.

Gross earnings were ..... \$6,127,096.77  
Charges for operating, maintenance, etc. .... 3,529,546.22

Net earnings ..... \$2,597,550.55

Dividends ..... \$923,901.31  
Bond interest, etc. .... 182,499.85

Payments to city:—  
Percentage on earnings ..... \$955,740.24  
Pavement charges .... 95,756.96  
General taxes ..... 71,416.46

1,122,913.66  
\$2,229,314.82

The passenger earnings, \$6,043,512.15, increased \$62,816.27 over 1913. The various charges against the earnings for operation, maintenance, etc., were \$3,529,546.22, or 58.4% of said earnings, an increase of 6.2%.

The payments made to the city were \$1,122,913.66, an increase of \$33,205.60.

Four quarterly dividends of 2% each were paid.

Passengers carried 152,966,153, against 151,263,925 in 1913. Transfers 65,778,022, against 63,083,118.

The percentage of charges, etc., to passenger earnings, 58.4, is the highest of any year for which figures are given, the record for 11 years being:—1904, 58.2; 1905, 56.8; 1906, 52.9; 1907, 53.09; 1908, 52.9; 1909, 51.4; 1910, 51.6; 1911, 55.2; 1912, 53.4; 1913, 52.2; 1914, 58.4.

The directors, who were re-elected, are:—Sir Wm. Mackenzie, President; Frederic Nicholls, Vice President; Sir Rodolphe Forget, Sir Henry Pellatt, Jas. Gunn, W. D. Matthews, E. R. Wood.

## The Street Railway Situation in Saskatoon.

A report on the street railway situation prepared by the commissioners has been under discussion by the Saskatoon, Sask., City Council. The report states that the total capital debt of the city in respect of the street railway, incurred and authorized, is \$725,000. The estimated cost of extending the railway from Second Ave. along Twenty-Fifth St., across the new bridge to connect with the street railway to Clarence Ave., is \$58,250; and the estimated cost of extending the railway through the Nineteenth St. subway to connect at the corner of Twentieth St. and Avenue A is \$79,143. The total debt of Saskatoon is \$6,159,153 or \$205 per capita, or deducting local indebtedness, \$114 per capita.

In discussing the manner in which the deficit on the system may be reduced, it is pointed out that \$55,000 has been allowed in the estimates for wages. The following is an approximate saving of wages if any of the schedules quoted were adopted in Saskatoon; Winnipeg rates, \$9,000; Vancouver rates, \$8,500; Moose Jaw rates, 10 per cent. off, \$9,900; Lethbridge, \$10,456; Edmonton, \$4,200; Calgary, increase, \$1,000.

The report concludes with three recommendations: 1. That the present rates for motormen and conductors be cancelled and a new schedule of rates in accordance with one of the cities quoted in the report be adopted, and that the bylaw be amended accordingly. 2. That, as previously recom-

mended, an experienced street railway superintendent be appointed, and the Electrical Engineer's superintendence be discontinued. 3. That the power rate to be charged by electrical power and light department for 1915 be 1½ cts. per k.w.h.

At a council meeting held Jan. 26, it was decided to employ an expert street railway man to take charge of the operation of the system; to reduce the charge for power from 2 cts. to 1½ cts. per k.w.h. A special committee was appointed to meet representatives of the employees to discuss the question of the adjustment of the schedule of wages so as to bring it into harmony with the rates paid in other cities.

The annual statement of the City Auditor for 1914 shows that the surplus on the operations of the railway was \$33,477.56.

At another council meeting, held Feb. 1, the following new wage schedule, to come into operation at once, was adopted:—26 cts. an hour for the first six months, 28 cts. for the second six months, 33 cts. for the second year, and 35 cts. for subsequent years. Coupled with the reduction is the rescinding of the suggestion made last September that the regular men lay off occasionally in order to provide more work for the spares. An amendment to bring the new schedule in operation May 15 was defeated.

The council also decided to continue the ticket system for another month.

Following are the audited figures covering the operations of the line for 1914, in comparison with 1913:—

Operating charges:—	1914.	1913.
Total revenue .....	\$153,972.66	\$158,947.33
Operating expenses ..	134,360.74	137,334.11
Excess of revenue over operating expenses ..	19,611.92	\$21,163.22
Capital charges:—	1914.	1913.
Interest .....	\$29,926.91	\$22,632.77
Sinking fund .....	11,091.71	3,048.79
Depreciation .....	12,070.86	15,136.49
	\$53,089.48	\$40,818.05
Less profit from operating account .....	19,611.92	21,163.22
Total deficit on system ..	\$23,477.56	\$19,654.83

The operating expense per car mile in 1914 was 19.348 cts., against 21.431 cts. in 1913. The traffic receipts per car mile last year were 22.172 cts., while in 1913 they were 24.733. Total passengers carried for the year 3,242,914, against 3,401,351.

The net deficit on the Sutherland line is \$168.87, the passengers carried being 159,485.

The Mayor and Commissioner Yorath received applications for the position of Superintendent for the railway to Feb. 25.

## Halifax Electric Tramways Co's Annual Report.

The report presented at the annual meeting in Halifax, Feb. 8, contained the following figures:

	1914.	1913.
Tram .....	\$319,880	\$301,771
Power .....	251,043	244,530
Gas .....	64,678	62,046
Miscellaneous .....	6,637	9,531
Total gross .....	\$645,241	\$605,923
Expenses .....	525,922	517,008
Profit .....	\$119,319	\$88,915
Balance .....	\$244,504	\$155,589
Retained .....	7,780	2,811
Dividends .....	\$112,000	\$112,000
Surplus .....	\$110,284	\$73,785

After the usual 8% dividend, \$126,813 remained to be carried forward to surplus.

against \$118,306 a year ago. Dividends were earned slightly better than twice over.

The surplus account, with \$126,813 from 1914, stands at \$921,735. The directors were re-elected.

## Cape Breton Electric Co's Report.

The report for 1914 shows gross earnings \$349,893.58; operating expenses and taxes \$211,119.24; net earnings \$138,774.34; interest charges \$62,849.19; balance \$73,925.15; bond sinking and improvement funds \$14,730; net balance \$61,195.15. Dividends were paid on the 6% preferred stock, absorbing \$14,040, and a 6% dividend was paid on the common stock, \$67,500, and for these purposes the surplus was drawn on to the extent of \$20,344.85. In 1913 the gross earnings were \$380,951.86; the net earnings, after deducting operating expenses and taxes, \$170,998.54, and the balance for sinking and improvement funds, reserves, depreciation and dividends \$112,365.65.

The authorized bonds amount to \$1,500,000, of which there are outstanding \$1,027,000; in the treasury, \$6,000; cancelled for improvement fund, \$2,000, and unissued, \$465,000. They are first mortgage 30 year 5% gold, due Jan. 1, 1932. The improvement fund consists of payments of 1% per year of the bonds issued. The authorized stock is \$500,000 preferred 6% non cumulative, of which \$234,000 is outstanding; and \$1,125,000 common stock.

The company does the entire electric lighting and electric railway business in Sydney, N. S., and the entire electric lighting business in North Sydney, the ferry business between Sydney and North Sydney, and operates an interurban electric railway between North Sydney and Sydney Mines. It also owns \$220,000 of the \$398,000 outstanding first mortgage bonds, and the capital stock of the Sydney and Glace Bay Ry. Co., an interurban line of 19 miles between Sydney and Glace Bay, which is operated under lease for 99 years from Jan. 1, 1911, and it guarantees the payment of the latter company's bonds as to principal, interest and sinking fund. The General Managers of the company are the Stone and Webster Management Association, Boston, Mass., and the Manager at Sydney is E. L. Milliken.

## Electric Locomotives for the London and Port Stanley Railway.

Some details of the three electric locomotives for the London and Port Stanley Ry., a general description of which appeared in Canadian Railway and Marine World for Nov., 1914, are now available. They will be of the box type, mounted on two 4 wheel trucks, the latter equipped with 36 in. rolled steel wheels. The general dimensions are as follows:—

Length inside knuckles .....	37 ft. 4 ins.
Length over all .....	37 ft.
Height to top of locked pantograph, 15 ft. 2 ins.	
Height to top of cab .....	11 ft. 9 1/2 ins.
Width over all .....	9 ft. 7 1/2 ins.
Total wheel base .....	26 ft. 8 ins.
Minimum curve .....	30 ft.
Weight, total .....	120,000 lbs.
Weight, electrical equipment .....	78,000 lbs.
Weight, airbrake and compressor .....	6,000 lbs.

Each locomotive will have two pantographs, supplying power to four 245 h.p. 750 volt d.c. motors, arranged two in parallel on the 1,500 volt line, and operated through a multiple unit control.

The Wentworth St. Mounting Co., Hamilton, Ont., has replaced its steam plant with an electric plant, and electric power is being used.



## The Jitney Omnibus Situation.

Within the last few months electric railways, particularly in the Western cities of the United States, have been given a competition by what is termed the "Jitney" omnibus. The principal field of operations of the jitney has been in the Pacific coast cities from San Diego, Cal., to Vancouver, B.C., but it has extended east as far as New Orleans and Kansas and neighboring States in the United States, and an endeavor is being made to introduce it into Saskatoon, Sask. The term jitney seems to have been coined offhand, various accounts being given of its origin, and is applied indiscriminately to auto busses and to itinerant autos carrying passengers at a five-cent fare upon any temporary route that seems likely to produce profits. "The expression jitney," says the Electric Railway Journal, "is said to be the side show barker's slang for a 5 ct. piece, and (as applied to this particular traffic) three months ago was hardly known outside the place of its origin, Los Angeles."

The genesis of the jitney bus seems to have been as follows: In 1914 the Pacific Motor Coach Co. was organized in Los Angeles, and 33 buses were put in operation in July. The company ran its buses mainly in competition with the Pacific Electric Ry. cars, cutting the round fare trip between Los Angeles and Venice from 50 cts. to 40 cts., and then to 25 cts. The company did an extensive business, but in time was given a competition in the shape of what is the real jitney, the 5 ct. itinerant car. As a result the Pacific Motor Coach Co. is now in liquidation with a total indebtedness of \$86,788, and assets valued at \$3,026, exclusive of cars.

The 5 ct. car competition began in Nov., 1914, and it was reported that by Christmas about 200 small cars were in operation in Los Angeles, and that the owners, who in most cases drove their own cars, were making from \$10 to \$12 a day. The idea seems to have spread with considerable rapidity, particularly in the coast cities, and in the inland cities where there was considerable tourist traffic. Different types of vehicles were used, and at present they range from the large double deck bus to the ordinary two seated touring car. In some cases the lighter motor trucks were provided with seats, and put on the streets.

It was not long before the necessity of regulating this new class of traffic became evident, and the city councils in Los Angeles, San Francisco, Oklahoma and other places put in force temporary regulations for the protection of the public. This brought about the organization of the jitney bus owners in the several cities, with a view of squeezing out the undesirable owners, and of obtaining better conditions from the councils. The regulations provided for the licensing of the cars at varying fees; the putting up of bonds for the protection of passengers from injury, etc., amounting to as high as \$10,000; and regulations as to traffic, with penalties for breaches of the rules. The result of the putting in force of the regulations was such that the traffic was practically killed in Oklahoma, and at Denver practically none but well organized companies, having considerable capital, can obtain a license.

The extent to which the traffic developed may be gathered from the report that at Jan. 30, jitneys were reported to be in operation in 39 cities in the United States; that there were 2,375 busses in operation in five of the Pacific Coast cities, and that in San Francisco alone from 15 to 20 new licenses were being issued daily. This new traffic development has been engaging the attention of the electric railway associa-

tions in the United States, as well as the city councils, and the question of the complete regulation of the traffic has been under consideration of the state legislatures in California, Kansas and Massachusetts. The San Francisco City Council is considering a proposition to operate a municipal jitney service in certain sections of the city, while the Olympia, Wash., Light and Power Co. is considering the adoption of the jitneys as an adjunct to its electric railway service.

The first jitneys in Canada appeared in Vancouver and Victoria, B.C., early in January, and they had become so numerous that on Jan. 27, the Vancouver Public Service was formed, with over 100 jitney drivers as members, and on Feb. 6, a similar association was formed in Victoria with 101 out of the 157 jitney drivers in the city as members. The councils in both cities took up the matter of the traffic at an early stage, and made temporary bylaws for its regulation, and in the case of Vancouver application was made to the British Columbia Legislature for an amendment to the city's charter of incorporation to authorize the

### Canadian Electric Railway Association.

PRESIDENT—C. B. King, Manager, London Street Railway Co.

VICE PRESIDENT—James D. Fraser, Director and Secretary-Treasurer, Ottawa Electric Railway Co.

HONORARY SECRETARY-TREASURER—Acton Burrows, Managing Director, Canadian Railway and Marine World.

EXECUTIVE COMMITTEE—The President, Vice President, Secretary - Treasurer, and

E. P. Coleman, General Manager, Dominion Power and Transmission Co.

Patrick Dubee, Secretary - Treasurer, Montreal Tramways Co.

A. Eastman, General Manager, Windsor, Essex and Lake Shore Rapid Railway Co.

H. M. Hopper, General Manager and Purchasing Agent, St. John Railway Co.

Wilson Phillips, Superintendent, Winnipeg Electric Railway Co.

C. L. Wilson, Assistant Manager, Toronto and York Radial Railway Co.

ASSISTANT SECRETARY—Aubrey Acton Burrows, Business Manager, Canadian Railway and Marine World.

OFFICIAL ORGAN—Canadian Railway and Marine World, Toronto.

regulation of jitneys. The Victoria City Council took steps, Feb. 11, to obtain similar powers, and the B. C. Government decided to have the Municipal Act amended in such a way as to meet the conditions arising. The three bills are being given consideration by the Legislature's Municipal Committee at the sittings of which representatives of the British Columbia Electric Ry. and of the jitney bus owners have been present.

The Auto-Public-Service Corporation of B. C. has been incorporated under the B. C. Companies Act to carry on this kind of traffic. Victoria has two women who run jitneys.

A jitney service has been started in Toronto's Rosedale suburb.

The Superintendent of the Edmonton, Alberta, power plant offered, Feb. 12, to supply power for the Edmonton Radial Ry. at 1½ cts. per k.w. hour, instead of 2 cts. as then being charged.

The Regina, Sask., City Council has issued instructions to the police to stop the practice indulged in by boys, of attaching their sleds to the electric cars, owing to the danger to the traffic generally.

## The Ottawa and St. Lawrence Electric Railway Project.

From time to time Canadian Railway and Marine World has published statements which have been put forth as to intended construction on this line, but none of which have been fulfilled and it has never been possible to obtain any complete or satisfactory information about the company from the promoters, J. A. Morden & Co., Toronto. As far as we can judge the project is still in the promotion stage and we have been unable to ascertain what its financial position is, or what its prospects are.

The following letter from W. B. Russel, M. Can. Soc. C.E. Toronto, has been published in Saturday Night: "It has come to my knowledge today for the first time, that my name has been used in connection with and as being on the advisory board of the Ottawa & St. Lawrence Electric Ry., and that in connection with some request from some one to your paper for information some months ago, my name was given as being one of the advisory board. This certainly was without my knowledge or consent, that is, I mean that the railway company had no authority to use my name in this capacity, and I am notifying them today to this effect. I would ask you to kindly state that I am not connected in any shape or form with this enterprise, and I was not aware that they were using my name as being connected with their enterprise."

### Mainly About Electric Railway People.

C. W. Colvin is reported to have been appointed Transmission Engineer, British Columbia Electric Ry.

B. R. Jenkins, inventor of the Jenkins automatic fender for street cars, died in Toronto, Feb. 18, after two years illness.

E. Anderson, K.C., gave an address on the history and development of the Winnipeg Electric Ry., at a luncheon of the Jovian Order, at Winnipeg, recently.

E. A. Evans, M. Can. Soc. C.E., formerly General Manager, Quebec Ry. Light & Power Co., has been elected Grand Master of the Quebec Grand Lodge of A. F. and A. M., for the current year.

Allan Purvis, Manager, Interurban Lines, British Columbia Electric Ry., has resigned. It is stated that a successor will not be appointed, but that the duties will be merged with those of the General Superintendent.

Lieutenant-Colonel E. W. Rathbun, President, Oshawa Ry., was given a farewell by the citizens of Deseronto, Ont., Feb. 13. He has been appointed to the command of the 6th Artillery Brigade, and will sail with the second contingent for service in Europe.

W. H. Hazlitt, who has retired from the position of Purchasing Agent, British Columbia Electric Ry., after having been in the company's service since 1900, was presented with a gold watch and chain by the staff of the general offices, Vancouver, Feb. 1.

It is reported that information has been received in Toronto as to the whereabouts of J. W. Moyes, responsible for the tangle in the construction of the Ontario West Shore Ry., and that a new warrant has been sworn out, under which he can be extradited to the Dominion. It is stated that the previous warrant did not allow of extradition proceedings being taken.

William Parker, heretofore Inspector, Hamilton St. Ry., Hamilton, Ont., has been appointed Superintendent. Since the accidental death of Duncan Miller about two



years ago, the duties of Superintendent have been carried out by J. Pearson, one of the Chief Inspectors, who now resumes his former position, and will in addition act as Assistant Superintendent.

### Electric Railway Finance, Meetings, Etc.

**Brantford Municipal Ry.**—The new cars commenced to run in Brantford on Dec. 17 and the revenue from Dec. 18 to Jan. 16, both inclusive, was \$4,188.24, against \$3,104.21 for the corresponding period of 1913-4. These figures are for the lines in Brantford only, and do not include the Grand Valley Ry. between Brantford and Galt, as a bridge at Blue Lake was down and there was other trouble, consequent upon the bad state of the line, which affected the traffic.

**Brantford Municipal Ry.**—Earnings for January for city lines and interurban line Brantford to Galt, \$6,676.94.

**British Columbia Electric Ry.**—Gross earnings for December, \$674,063; operating expenses and maintenance \$512,663; net income \$161,400, against \$793,219 gross earnings; \$548,535 operating expenses, maintenance, etc.; \$244,684 net earnings, for Dec., 1913. Aggregate gross earnings for seven months ended Dec. 31, \$3,998,899; net earnings, \$924,331, against \$4,553,726 aggregate gross earnings; \$1,221,405 net earnings, for same period 1913.

**Berlin and Waterloo St. Ry.**—The report for 1914 of this municipally owned railway shows total receipts of \$72,973.69. There was a decrease of over \$4,000 from 1913, but a net profit of \$405.70 was shown for 1914, of which 75% is paid to Berlin and the balance to Waterloo.

**Calgary Municipal Ry.**—Total receipts for January \$47,550.86 against \$55,827.06 for January, 1914.

**Calgary Municipal Ry.**—The financial condition of this railway has been under discussion for some weeks by the Board of Commissioners at Calgary, Alberta. Replying to a suggestion that the system should be run as if owned by a private company, Commissioner Greaves said it was impossible, as it would involve the cutting off of service over some 10 or 20 miles of track, which the citizens would not submit to. Commissioner Garden expressed the opinion that the railway was getting the better of a private corporation in escaping paving and other charges. The matter is still under consideration.

P. S. Fitter, Publicity Commissioner, in a communication to the press on the finances of the line, points out that although the loss on operation for the 11 months ended Nov. 30, 1914, was \$44,284, during the four years operation of the line, a surplus of \$300,000 had been built up over and above all fixed charges. The loss in operation is practically on two lines only, the Bowness Park line, which the city operates in consideration of a park site which had been granted, and the other the line to the C.P.R. Ogden shops. The present loss on this latter line is \$50 a day. (Aug., 1914, pg. 384.)

**Detroit United Ry.**—The Board of Street Ry. Commissioners has under consideration a proposition to acquire the system of electric railways in Detroit, Mich. So far as the proposition has been discussed only the lines within the city area are included. The company owns the Sandwich, Windsor and Amherstburg Ry., operating lines in and between Windsor, Walkerville, Sandwich and Amherstburg, Ont. It was stated at the annual meeting of shareholders, Feb. 3, that a definite announcement upon the question of the proposed purchase would be made as soon as possible after the meet-

ing of the directors of the D. U. Ry. and the Municipal Commissioners, Feb. 15.

**Dominion Power and Transmission Co.**—A Hamilton, Ont., press dispatch says that at the annual meeting it was announced that the company had a surplus of \$65,559 after paying dividends of \$461,392. The receipts of the street railway and radial lines fell off \$106,000.

**Edmonton Radial Ry.**—The estimates for this year submitted to the Edmonton, Alberta, City Council, Feb. 10, contain the following respecting the E. R. Ry. Estimated receipts, \$582,000. Expenditures, maintenance, operation and power charges will be \$444,000, leaving a surplus of \$148,000 of revenue over operation alone. Fixed capital charges, however, amount to \$240,000, leaving a deficit of \$92,000, without taking into consideration the depreciation charges of \$102,000. With this included the Superintendent estimates the total deficit of the railway for this year at practically \$200,000.

**Edmonton Radial Ry.**—The City Auditor's report that the operating expenses for 1914 increased \$45,000 while the revenue only increased \$13,000 as against the figures for 1913, has been questioned by Commissioner Harrison and Superintendent Larmonth. The Superintendent has been instructed to make a report showing in what respect he claims the auditor's figures are not correct.

**Hamilton St. Ry.**—The percentage paid to the city for the three months ended Dec. 31, was \$12,702.97. The total paid during 1914 was \$54,712.08, against \$59,290.56 in 1913.

**Moncton Tramways, Electricity and Gas Co.**—The Eastern Trust Co. received offers recently for the sale to it, under the terms of the trust deed, bonds to the amount of \$12,000 at a price not exceeding 5% premium. The \$12,000 is at the credit of the sinking fund, and failing to receive offers of bonds, the trustees will draw bonds for redemption to the amount necessary.

**Montreal Tramways Co.**—Three cheques aggregating \$508,665.51 were given by the company to the Montreal City Treasurer, at the end of January. The balance of the \$603,911.57, which was claimed to be owing at Dec. 31, is in course of adjustment, which involves the consideration of the merits of a counterclaim.

**Regina Municipal Ry.**—Unofficial reports in Regina, Sask., are to the effect that the deficit upon the operation of the electric railway for 1914 will reach \$96,000, including debenture interest and all overhead charges. The actual loss arising from operation was \$10,000 in May, but with economies effected this had been reduced to \$6,000 at the end of the year. The interest and other charges were \$90,000.

**Sandwich, Windsor and Amherstburg Railway.**—The report of the Detroit United Ry., which owns all the capital stock of the Sandwich, Windsor and Amherstburg Ry. Co., which in turn owns the capital stock of the Windsor and Tecumseh Electric Ry. Co., shows the mileage of these latter lines at Jan. 1, 1914, as 39.9312, to which was added during the year, 0.3466 mile.

Statistics of the year's operations are as follows:—Revenue passengers, 5,068,191; transfer passengers, 679,015; employee passengers, 17,160; total, 5,764,366; receipts per revenue passenger, 0.0512c.; receipts per passenger, 0.045c. Car mileage, 1,037,467; earnings per car mile, 0.2582c.; expenses per car mile, 0.1663; net earnings, per car mile, 0.0919.

During the year \$110,577.16 was spent on extension to lighting plant, new track and additional equipment.

**Sherbrooke Ry. and Power Co.**—Gross earnings for six months ended Dec. 31, \$74,819.29; operating expenses \$44,617.97;

net earnings \$30,201.32, against \$75,914.87 gross earnings; \$46,337.61 operating expenses; \$29,577.26 net earnings, for same period 1913.

Earnings of Toronto Ry., for January, \$471,226 against \$501,843 for Jan. 1914.

**Winnipeg Electric Ry.**—Gross earnings for December, \$368,400; operating expenses \$230,719; net earnings \$137,681, against \$379,863 gross earnings; \$211,969 operating expenses; \$167,894 net earnings, for Dec. 1913. Aggregate gross earnings for 1914, \$4,101,302; net earnings \$1,685,093, against \$4,078,694 aggregate gross earnings; \$1,826,087 net earnings, for 1913.

The percentage payments to the city for 1914 were \$122,226.90.

### Electric Railway Notes.

The Toronto Suburban Ry. is applying to the Ontario Legislature for power to operate cars on Sundays.

British Columbia Electric Ry. employees in Vancouver, New Westminster and North Vancouver, contributed \$839.12 to the local war relief fund for the month of December.

The City Commissioners of Saskatoon, Sask., received applications for the position of Superintendent of the municipal railway, to Feb. 25.

The Moose Jaw Electric Ry. has made a special issue of tickets, 8 for 25 cents, to the members of the 46th Battalion Third Contingent, in training at Moose Jaw, Sask.

A London, Eng., cable states that owing to the scarcity of labor in Great Britain the managements of a number of street railway systems are considering the advisability of employing women as conductors.

The Saskatchewan Supreme Court has awarded a Regina Municipal Ry. conductor named Schell \$2,000 damages against the city. He was knocked off the step of his car by coming in contact with one of the iron standards of the Broad St. subway.

One of the judges of the Ontario High Court of Judicature has decided that W. C. Hawkins, Managing Director and Secretary, Dominion Power & Transmission Co., must answer certain questions in a suit brought by C. W. Moodie, against the directors, who Moodie claims have voted themselves excessive fees.

The Brantford, Ont., Municipal Ry. Commission is preparing to issue school children's tickets at 10 for 25 cts. The council has authorized the commission to carry the liability of the employees under the Workmen's Compensation Act, and also to the general public, from the operation of the street railway, by setting aside annually a sum to provide a fund to meet claims.

The London St. Ry. is asking the city for a renewal of the agreement allowing the operation of cars on Sundays. It is reported that the Board of Control is looking into the question with a view to obtaining some concession from the company, either a percentage of earnings, or extra mileage payments. The company claims that Sunday cars do not pay, but are run as a public convenience.

The Calgary, Alberta, Street Railway Men's Association, Feb. 12, accepted the new wages schedule, which provides for a reduced rate of pay consequent upon war conditions. The new schedule comes in operation at once and provides as follows: While operating on the spare list: First year, 28 cts. an hour; second year, 30 cts.; after two years, 32 cts. Regular runs—First six months, 32 cts.; second six months, 33 cts.; third six months, 34 cts.; fourth six months and thereafter, 35 cts. The new schedule is estimated to effect a saving of about \$10,000 during the year.



## Electric Railway Projects, Construction, Betterments, Etc.

**Brantford and Hamilton Electric Ry.**—The company is applying to Parliament for an extension of time for building the branch from Langford to Galt, Ont. (Nov., 1914, pg. 516.)

**Brantford Municipal Ry.**—The Brantford, Ont., City Council is asking the Ontario Legislature to confirm a number of bylaws, among them being one for borrowing upon debentures \$270,000 for the purchase, improvement and equipment of the Grand Valley Ry. (Feb., pg. 70.)

**Brantford Municipal Ry.**—The Commissioners, on Feb. 13, approved of plans for a new street railway station to be built on the site of the old power house on Colborne St., opposite Clarence St., Brantford. Work is to be started at once. (Feb., pg. 70.)

**British Columbia Electric Ry.**—A steel span replacing the old wooden one has been erected in False Creek bridge, on the Lulu Island branch line, Vancouver. The new bridge consists of one span of 125 ft., which was erected on scows and floated to the site, and raised by the tide to the new pile foundation. The other half of the bridge consists of a swing span, which has always been of a permanent character. The contractors were J. Coughlin and Son, Vancouver, and the work was done under the direction of H. P. Peterson. (Feb., pg. 70.)

**Cornwall St. Ry., Light and Power Co.**—The Cornwall Town Council is applying to the Ontario Legislature for the confirmation of a bylaw granting an extension of the company's franchise for a further period of 20 years. (Dec., 1914, pg. 553.)

**Forest Hill Electric Ry.**—The Ontario Legislature is being asked to extend the time for the building of this projected electric railway on Forest Hill Road, Toronto, northerly and northwesterly to 2.50 miles north of Eglinton Ave., also on Eglinton Ave., to one mile west of Dufferin St., and northerly on Dufferin St. for 2.50 miles. W. E. Grierson, T. J. Glover and J. Hales, Toronto, are the provisional directors. (June, 1914, pg. 282.)

**Hamilton Mountain Electric Ry.**—Application is being made to the Ontario Legislature for an extension of time within which to build the projected electric railway from the Hamilton Mountain road, Ancaster tp., at the crossing of the Brantford and Hamilton Electric Ry., to Mount Albion, Barton tp., and from northerly boundary of Hamilton at the Hamilton and Caledonia Road, to Ryckman's Corners, three miles. T. H. Crerar, L. R. E. Awrey, S. B. Thomson, G. E. Armstrong and T. H. Stinson, Hamilton, Ont., are the provisional directors.

**Hamilton St. Ry.**—The question of the extension of the company's tracks on Birch Ave. extension across Coal Oil Inlet was considered Jan. 26 by G. A. Mountain, Chief Engineer of the Board of Railway Commissioners. The City Engineer proposed that the company divert its tracks and this suggestion was approved by Mr. Mountain, who recommended the use of 10 ft. ties instead of 8 ft. ones. The work will, it is said, be done early in the spring. (Jan., pg. 28.)

**Hull Electric Co.**—The citizens of Gatineau Point, and of Hull, Que., are negotiating with the H. E. Co. to secure an extension of the company's line to Gatineau Point. (Sept., 1914, pg. 431.)

**Hydro-Electric Power Commission of Ontario.**—At a Board of Trade dinner in London, Ont., Jan. 29, Sir Adam Beck said he did not think he was visionary in saying that if the Dominion Government subsidizes radial lines Ontario will build 1,000 miles that will

pay from the day operation is started. The making surveys and estimates was one involving a great deal of anxiety to the Commission. In referring to the projects for the building of electrical lines centering on London, he said the development of such a system would mean much for the city. The lines referred to included a belt line round the city, a line to Aylmer, and one to St. Marys, connecting with one to Stratford, Berlin and Toronto, with lines to Arkona and Sarnia, Chatham and Windsor.

A deputation from Tillsonburg waited on Sir Adam Beck, Feb. 2, urging the inclusion of Tillsonburg in the project.

The Collingwood, Ont., Board of Trade has been informed by F. A. Gaby, Chief Engineer, that the Commission's engineers are completing their surveys in that district, and that the plans will be laid before the municipalities at an early date. (Feb., pg. 70.)

**Lacombe and Blindman Valley Electric Ry.**—Grading is reported completed on this railway from Lacombe to Rimbey, 37 miles. Nothing has been decided as to when track will be laid. This is one of the light railways authorized to be built under provincial guarantee of bonds to the amount of \$7,000 a mile. (Dec., 1914, pg. 553.)

**Lethbridge Municipal Ry.**—The Lethbridge, Alberta, Board of Trade is pressing the City Council to undertake the extension of this railway to Hardieville. The council has the matter under consideration.

The question of the cost of lifting and relaying the electric railway tracks under the 18th St. subway, \$465.61, is in dispute between the City Council and the C.P.R. No provision was made in the agreement for this work, and the C.P.R. now wants to collect it. The City Council referred the matter to the City Solicitor, Feb. 1. (Dec., 1914, pg. 553.)

**London and Lake Erie Ry. and Transportation Co.**—W. N. Warburton, General Manager, had a conference, Jan. 22, with representatives of Malahide, Aylmer, Yarmouth, and St. Thomas municipalities with reference to a proposition to extend the company's line from St. Thomas to Aylmer and from Union to Sparta, Ont. This proposition has been under discussion for several years. (Sept., 1914, pg. 431.)

**London St. Ry.**—The committees of the London, Ont., City Council met C. B. King, Manager L. S. R., Feb. 15, to discuss street railway matters. The two questions about which the discussion chiefly centred were the matter of track extension and that of the renewal of the bylaw allowing the operation of Sunday cars. The company offered to extend the Hamilton Road line to West St., on condition that some arrangement was made by the city to aid in financing the work. The committees wanted something better than this and adjourned its consideration for a week. The committees offered to renew the Sunday bylaw on condition that 9 tickets be sold for 25 cents, and that 10% of the proceeds be paid to the city. Mr. King said it was a waste of time to consider such a proposition. (Jan., pg. 28.)

**Montreal and Southern Counties Ry.**—We are officially advised that it is expected to start work early in the spring upon the 1,700 ft. extension to Youville Square, Montreal. It will start from the present track ville St., to St. Peter St., on that street to Youville Square, and along that square to McGill St., with a Y in front of the central fire station. (Feb., pg. 70.)

**Ottawa and St. Lawrence Electric Ry.**—An unconfirmed press report states that work on the Perth and Smiths Falls section of this projected railway will be started early in the spring. It is stated that the line will run through Rideau Ferry, and not as originally planned. (Jan., pg. 28.)

**Pictou County Electric Co.**—We are officially advised that the extension to Parkdale will be started about April 1, and that it will be completed about three weeks thereafter. L. L. Flaherty, Stellarton, N.S., is Manager. (Feb., pg. 70.)

**Regina Municipal Ry.**—We are officially advised with reference to the press reports that a mile and a half of new track would be laid this year in Regina, Sask., that it is unlikely that any such construction will be undertaken, though it might be found possible, later on in the year, to arrange for it. (June, 1914, pg. 283.)

**St. John's (Nfld.) Ry.**—We are officially advised that there is no truth in the recent press report that the company is preparing to extend its tracks. (Feb., pg. 70.)

**Three Rivers Traction Co.**—Press reports state that the Three Rivers, Que., City Council has granted a 20 years franchise for the operation of a street railway in the city. The terms have been under consideration for over a year. (Nov., 1914, pg. 517.)

**Toronto, Barrie and Orillia Ry.**—The Ontario Legislature is being asked to authorize the reduction of the company's capital stock, and to extend the time for the building of the projected railway in Barrie, northerly to Orillia, and southerly to Toronto. Bicknell, Bain, Macdonald and Gordon, Toronto, solicitors for the company. (May, 1914, pg. 232.)

**Tramways Limited.**—We are officially advised that while there was a large majority in favor of ratifying the bylaw and agreement between the company and the Edmonton, Alberta, City Council, there was not the necessary two-thirds majority required for its ratification. The action to be taken under these circumstances is being considered. (Feb., pg. 71.)

**Transcona.**—The application of the Town Council of Transcona, Man., for the annulment of the contract with J. H. Kern, for the building of an electric railway in the town was heard by the Manitoba Public Utilities Commissioner, Feb. 5. The town claims that the contractor has failed to live up to his agreement, while Kern claims that he was granted an extension of time until the spring to begin work, and says he is prepared to build the line as agreed upon.

**Winnipeg Electric Ry.**—The Manitoba Legislature is being asked to amend the company's charter by adding to its powers. The notice of application does not state the additional powers to be asked for.

It is said that the tracks laid on Arlington bridge when it was built are to be torn up and relaid, and that a car service will be operated over it in the summer. The Arlington cars now run along William Ave. to Arlington St. (Jan., pg. 28.)

**Sunday Car Service in London, Ont.** The London St. Ry.'s annual report states that Sunday service was started Feb. 22, 1914. The service has been approximately 70% of that of an ordinary week day, whereas the earnings have been only approximately 40%. The amount of service each Sunday has been varied as requirements seemed to justify, so that this service has proved to be ample for the present at least. It is obvious from the above that the profits on the Sunday car service are not nearly so much as from the week day service, and that therefore the percentage of operation will be slightly increased.



# Marine Department

## Canadian Lake Protective Association Annual Meeting.

At the annual meeting in Ottawa, Feb. 16, the President, L. Henderson, Managing Director, Montreal Transportation Co., occupied the chair. The report, which is given in full below, was unanimously adopted.

The following were elected as the executive committee:—A. E. Mathews, Mathews Steamship Co., Toronto, Chairman; W. J. Bassett, Bassett Steamship Co., Toronto; W. E. Burke, Canada Steamship Lines, Montreal; H. W. Cowan, Canada Steamship Lines, Toronto; W. L. Reed, Canadian Northwest Steamship Co., Toronto; G. E. Fair, Farrar Transportation Co., Toronto; R. Fraser, Montreal Transportation Co., Kingston, Ont.; J. T. Mathews, Mathews Steamship Co., Toronto; Jas. Playfair, Great Lakes Transportation Co., Midland, Ont.; H. W. Richardson, Great Lakes Transportation Co., Kingston, Ont.; A. A. Wright, St. Lawrence and Chicago Steam Navigation Co., Toronto.

### Annual Report.

Following is the annual report signed by the committee: L. Henderson, Chairman, W. J. Bassett, W. E. Burke, H. W. Cowan, S. Crangle, G. E. Fair, R. Fraser, J. T. Mathews, J. Playfair, H. W. Richardson, and A. A. Wright:

The season of 1914 presents, on the whole, a very favorable casualty record. There were no total losses. Several strandings or groundings, and two or three collisions, contributed fairly large individual amounts to the season's total claim upon underwriters, yet even these cases have been of only moderate consequence compared with corresponding casualties in previous years, and an outstanding feature of the season's record is that no vessel was withdrawn from service on account of damage for more than a limited period. In one or two cases the damage might have been much greater but for fortunate circumstances, and the vessels in question have been in serious peril which under more careful management they would not have encountered, yet nevertheless the season must be judged by actual results and it is a fact that in number and character the recorded casualties are comparatively light.

The appendix at the end of this report contains an analysis of the accidents reported. There were 18 strandings or groundings. As the worst of these occurred in the rivers and without stress of weather, other than fog, and the vessels were quickly released, it has been thought better not to attempt to distinguish them from cases of less importance, by classification as strandings, as that term has a meaning broad enough to include most of the minor cases of groundings. All 18 cases are therefore grouped together. Four of them, including one of the most serious, occurred in Lake St. Louis, and further reference to these will be made later in this report in connection with remarks regarding the pilots of the Upper St. Lawrence, and relating to aids to navigation. In five of these cases fog was the chief, or at least, a contributing cause. In two, spar buoys were not satisfactorily placed; in two others gas buoys were out, and in one, red buoys were mistaken for black. In two cases the steering gear had jammed, in one case for unascertained cause, and in the other through obvious negligence in storing cargo. In another case smoke had obscured inefficient range lights. Stress of weather was responsible in another case; a sunken

ship partly blocked a channel in another, in another the master blamed the wheelsman and investigation is still pending. Another afforded a glaring instance of failure to check the course the wheelsman was following which was given to him verbally as S 80° W, and steered till the ship brought up on soft bottom as N 80° W; and in another, one of the worst, no excuse whatever could be found. In three of these cases the master was censured by your committee. In two others the pilot was censured. In one an official enquiry as to the pilot's conduct was asked for, but for a variety of reasons postponed, and in one the master is now in default as to enquiries made of him by your committee, and further action must be taken. In one case a master was relieved of his vessel and let go.

Twenty-three collisions appear in the list. The great majority of these are of minor importance, occurring in crowded quarters in harbor, or else in canals and in any case at slow speed. In a number of these the fault is clearly attributable to a vessel not enrolled in your association. Of the others, only four cases are of importance, and in none of these has your committee yet endeavored to place the blame upon the master of either vessel, as in each of the four cases the question is in litigation. Two of these four important collisions occurred in the canals, with only a moderate damage, the vessel in each case being able to proceed to destination; one occurred while approaching the St. Clair Flats Canal in Lake St. Clair, when a ship was struck by an overtaking vessel, and one in the open water of Lake Ontario, in fog. No vote of censure has yet been recorded in any collision case.

There are 11 cases of damage from striking bridges, docks, piers and harbor and channel banks, and in none of these has your committee thought it well to find fault, as it has appeared that the accidents occurred under circumstances over which the master could not be expected to have complete control. Only one case of striking canal docks or gates is reported. In this respect the record is incomplete, and the fact is that canal navigation by vessels of 43½ ft. beam through locks of 45 ft. width is necessarily attended by so many collisions of minor importance with lock walls and wing walls, that masters have found some excuse for failing to report the ordinary run of accidents of this nature and may naturally enough be tempted to refrain from reporting similar cases involving greater damage. The matter is made the subject of further remark later in this report with special reference to the question of development of power from canal water. Your committee for 1915 will require to consider the question of reports of minor accidents and it is recommended that all accidents should be reported and the committee constituted the sole judge of their importance, the master in each case exercising his privilege of reporting fully his opinion of the character of the damage. It is important to note that none of the frequent accidents in which lock gates have been broken have been occasioned by vessels enrolled in your association. At the same time these accidents have placed vessels of your association in peril and in addition to being a constant source of delay to traffic are a menace to the safety of all vessels in the vicinity. Your committee has

therefore renewed the requests heretofore made for the installation of some sufficient safety device on all lock gates to prevent the possibility of their breaking away under water pressure when forced slightly out of mitre.

It is a matter of great regret that while the association appears to be able to fulfill the very important purpose of supervising the navigation of the vessels enrolled, and while undoubted progress has been made in this respect and substantial advantage has undoubtedly been gained, nevertheless, no satisfactory method has been devised for compiling records of premiums and losses. At the last annual meeting a plan recommended by your committee of 1913 was adopted, which all hoped would provide the required record in a simple and satisfactory manner. Dale & Co., Ltd., were to write 5% of the risk on each vessel and provide the association every year with tabulated statements of all premiums and all losses. An agreement was made with that company and was observed by a large number of members of the Association who caused their insurance to be placed with due regard to this agreement. But unfortunately unforeseen difficulties arose. One member with a very long list of insurable tonnage appears to have been able to procure a special policy containing better terms than those written for the majority of members, and again the scheme was launched so well on towards the opening of navigation that some members failed to instruct their brokers with definiteness before arrangements were made which precluded the possibility of placing the required proportion of insurance with Dale & Co. It was therefore apparent that at least for the present this plan could not succeed and at a meeting later in the year your committee regretfully acknowledging this fact.

Realizing, however, that the close supervision of navigation and enforcement of the maxim safety first constituted the chief duty of the association your committee has tried to secure strict compliance with the rules formulated for that purpose and to obtain the co-operation of masters in this endeavor. In dealing with reported casualties your committee has of course kept in mind the difficulties with which navigators contend, and every allowance has been made for the circumstances over which the man in charge of a vessel has no positive control. Where doubt existed the committee has erred on the side of justice to the navigator and the votes of censure recorded have been passed only with respect to perfectly apparent cases of negligence or mismanagement. In a number of doubtful cases the committee has contented itself with investigation of the casualty by correspondence, and suggestions have been made to the master in such cases calculated to show that his actions are the object of close scrutiny and that future negligence once proved would be followed by reprimand. In all cases where the circumstances appeared to require assistance by the committee action was taken by way of seeking the installation of improved aids to navigation, or lodging complaint in the quarter from which the trouble arose. This question of aids to navigation has engaged the attention of your committee on a number of occasions and the casualties reported have proved a fruitful source of suggestion for improve-



ment in the system of buoying or lighting in a number of places. Correspondence has followed and the Marine Department or the Lighthouse Board has taken action to improve faulty conditions wherever the need has been brought to their attention. A number of the cases referred to in the report of the Dominion Marine Association's Committee have come first under the consideration of your committee and the fact that the President of the Dominion Marine Association, who holds a seat ex officio on the Dominion Lighthouse Board, is also ex officio chairman of your committee, has contributed largely to the satisfactory settlement of many suggestions for improved aids to navigation raised by the casualties above referred to.

The difficulties arising in the canals from the development of power have been prominently brought to your committee's attention. That strong currents are developed, and that water levels are interfered with, are statements for which further support is found in a number of accidents, and while some action has been taken in the matter by the Dominion Marine Association from time to time and it is again referred to in the report of that association's committee, your committee feels compelled to urge the importance of the subject and the necessity for further vigorous protest at every opportunity.

Another important subject arising from the consideration of casualty reports is that concerning the pilots engaged in river navigation between Montreal and Kingston. Early in the season of 1914 your committee realized that a number of casualties in the upper St. Lawrence were occurring while the direct and immediate control of the navigation of the vessels damaged was in the hands of these pilots, and that, as the primary fault in many cases lay with the pilots, means must be taken to subject them to control, as otherwise the supervision and disciplining of masters in this part of the river would be a most ineffective measure. The Dominion Marine Association, actuated by the unfortunate experience of its members in connection with the association of pilots in the lower St. Lawrence, had during 1913 filed an emphatic protest against the establishment of a pilotage district under the Shipping Act for the upper section of the river, and therefore, after careful consideration your committee determined that the pilots in question should be simply subjected to the same regulations and discipline as the masters. It developed that a small number of these pilots were without masters' certificates, and as a first step a rule was adopted prohibiting the engagement of a pilot, other than a member of the crew, who does not hold a master's certificate, and requiring all engaged pilots to submit themselves to the committee's jurisdiction by signing an agreement to that effect. The requirement that a pilot must hold a master's certificate was made for the double purpose of avoiding the surrender of the ship to an uncertificated man, and to enable the assistance of the Wreck Commissioner to be invoked for the purpose of penalizing men deserving punishment, that commission having authority only over the certificates issued. The pilots interested did not at first appear ready to conform to this proposal, but a deputation which called at the offices of your association and discussed the question went away expressing themselves completely satisfied and convinced that the plan was one which should be carried out and should receive support from all parties. Your committee wishes to emphasize the importance of strict adherence to the rule that only men with masters' certificates be engaged hereafter and it is recommended that your committee for 1915 give this mat-

ter special attention. Recently the Deputy Minister of Marine has submitted a recommendation made by the Wreck Commissioner that something should be done to require licensing and supervision of these pilots. The action of your committee has been reported to the Deputy Minister as an answer to this and it is hoped that fair opportunity will be given to test the effectiveness of the present arrangement.

For various reasons your committee has not lodged any formal applications during 1914 for the investigation of casualties by the Dominion Wreck Commissioner. The two cases in which masters were censured by your committee did not require investigation, as the facts were abundantly clear, and the fault in each case was of a nature that did not justify any action with respect to the master's certificate. In one or two cases of collision, where it appeared that fault should be imputed to one or both masters involved, it was found that litigation was pending and would develop the required information fully. Your committee, in such cases, has felt it necessary to avoid prejudicing the interests of a party by asking for an official investigation. The cases in which river pilots were censured occurred early in the year, before your committee had definitely decided upon any policy with reference to such casualties, and at that time there was also an objection to asking for a wreck investigation, on account of pending action referred to in the Dominion Marine Association's last report looking to a reorganization of the Wreck Commissioner's court.

Very little trouble was experienced with ice in 1914 and only one casualty report is filed with reference to damage received in this way. In this case the only damage was the blocking of a circulating pump with soft ice, but with engines out of commission the vessel was in some peril and a salvage claim arose for the services of another ship in towing to port with a gale of wind blowing. At one time towards the close of the season the services of ice breakers seemed desirable to assist vessels to port and steps were taken by members of your committee to have assistance sent, but the weather moderated and the season closed without any serious ice trouble.

There was no special rate agreed upon in 1914 for extensions of insurance after the close of November. The fact is that practically no one was anxious for it, as it may very well be said that at the rates of freight prevailing no one could well afford to pay for extensions of insurance. In one or two cases individual vessels were covered after the close of the regular season at rates agreed upon in each case by the owners of the vessels. In this connection reference may also be made to the general insurance rate of 1914. For full cover above the Welland Canal it was  $4\frac{1}{2}\%$ , and the customary additional rates applied to voyages extending to the foot of the lakes and to Montreal.

Your committee was instructed at the last annual meeting to accept wooden tonnage for enrolment in a special class on terms which were to be fixed by your committee. Accordingly provision was made in due course for enrolment of wooden vessels in a separate class on terms identical with those in force respecting steel hulls, and notice of this was given to members of the association. Thereupon one wooden steamer, the Sarnor, was presented for enrolment, and tonnage dues upon her were paid to the association. In July last this vessel was ashore in the St. Lawrence and later she caused substantial damage in the Welland Canal and was ultimately surrendered by her owners to the Dominion Government as security for this damage claim. Mortgage, salvage, damage, wage

and supply claims are now pending against her.

During the year your committee received reports from superintendent engineers of canals, regarding the available draft of water, and the information has been duly circulated. Special correspondence has taken place with reference to the draft of water available in the Welland and St. Lawrence Canals, and the question has had particular attention in connection with the use of canal water for power development. The serious difficulties occasioned by the conflict between power and navigation interests are referred to in this report, and in the Dominion Marine Association's reports. The subject has been brought to the attention of the International Joint Commission at a session in Detroit in Nov., 1914, and it is recommended that it be made a prominent feature in representations addressed to the ministers at Ottawa on the occasion of your association's annual meeting. Special correspondence has also taken place with reference to minor collisions in the canals occasioned apparently by insufficient attention to the regulations and to the advice given from time to time by your committee. The matter was called particularly to the attention of masters by a bulletin issued during the summer, in which the annoyance, delay and expense occasioned were called to the attention of masters, and an appeal was made for strict adherence to the rules and implicit obedience to the dictates of caution and good seamanship.

A nice question arose in connection with casualty reports regarding collision cases, and your committee decided that in these cases the casualty reports might be sent direct to the offices of the owners of the respective vessels, to be used at the owners' discretion, and to be withheld by them, so far as exact particulars of the collision are concerned, if litigation was likely to arise. Masters were notified of this in a bulletin and were instructed that they might simply notify the association of the time and place of the collision, and the names of the vessels, provided full and detail reports were sent in to the owners. Owners at the same time were required to advise the committee of the general circumstances, so that action might be taken which would be fair to both parties. The usual amount of general correspondence with underwriters, brokers, individual members of the association and other parties has also been carried on. The bulletin has been regularly issued after each meeting of the committee, and has been sent to all members of the association and to the masters of all vessels enrolled.

Special attention is again called to the rule requiring that casualty reports should be filed in all cases, and the members of the association are asked by your committee to endeavor to see that it is carried out. Complete obedience to the rule will furnish the association with a complete record of casualties and it will also tend to make the system of reporting generally satisfactory to all parties. The failure to note an important casualty in the bulletin will very naturally encourage masters to withhold reports, as it will not seem fair to them that one accident should escape mention and another be made the subject of discussion. During 1914, at least with reference to casualties of any importance, it may be said that the majority of the cases were duly reported, and that but few masters are in default. Nevertheless, it is known that some few casualties of some importance were not duly reported, and your committee recommends that hereafter in all such cases mention should be made of the fact in the bulletin, with due comment on the master's failure to obey the rule. In one or two more important cases of this nature



during 1914 the failure to report did not make so much difference, as it appeared to the committee that the master had already been disciplined by the owners of the vessel, and in at least one case had been dismissed. Yet, notwithstanding this, for the reasons named above the bulletin and the association's records should be made as complete as possible.

Early in the year it was found that the limited number of the committee rendered it difficult to obtain a sufficient attendance at meetings to give fair consideration to the business on hand, and at a general meeting of the association at Toronto, July 17, it was resolved to add to the committee W. J. Bassett, G. E. Fair, and A. A. Wright.

#### Analysis of Accidents Reported, 1914.

Groundings .....	18
Collisions .....	23
Striking locks or gates .....	1
Striking bridges, docks, piers, and harbor and channel banks .....	11
Stress of weather causing substantial damage .....	2
Engines put out of commission by ice in circulating pump .....	1
Striking unknown obstruction in channel .....	1
Total .....	57

#### Groundings.

St. Lawrence River .....	9
Lake Ontario .....	1
Lake Erie .....	1
Lake St. Clair .....	1
Detroit River .....	1
Lake Huron .....	3
St. Mary's River .....	2
Total .....	18

#### Collisions.

Harbors .....	7
Lake St. Peter .....	1
St. Lawrence Canals .....	3
Lake Ontario .....	1
Welland Canal .....	8
St. Clair River and Ship Canal .....	2
St. Mary's River .....	1
Total .....	23

#### Striking Locks or Gates.

Cornwall Canal .....	1
Striking Bridges, Docks, Piers, and Harbor and Channel Banks .....	3

Bridges .....	3
Docks and piers .....	4
Canal banks and walls .....	3
St. Lawrence River channel bank .....	1
Total .....	11

Stress of Weather Causing Substantial Damage.	
Lake Huron .....	1
Lake Superior .....	1
Total .....	2

Engines Put Out of Commission by Ice.	
Georgian Bay .....	1

Striking Unknown Obstruction in Channel.	
Lake St. Louis .....	1

**Use of Neutral Flags on Belligerent Merchant Vessels.**—Since the use of a neutral flag by the British s. s. *Lusitania* when approaching England recently, there has been a little misunderstanding as to the recognized use of a neutral flag under international laws. The intention conveyed in the German notice regarding shipping to Great Britain is a flagrant breach of the international rules, and the shipping of all nations, whether neutral or not, is endangered, to the extent of Germany's ability to carry out its threat. Whatever protection, however, there may be in the use of a neutral flag under the extraordinary conditions created by Germany, even a belligerent nation is entitled to claim, under the international rules, in order to protect the lives and property of neutrals on board. The right of search is not denied to the Germans, and the use of a neutral flag may, or may not, cause them to carry out such a search before proceeding to extremities. It is not considered, by those in authority generally, that the use of a neutral flag on belligerent merchant vessels will add in any way to such danger to neutral vessels as may now exist.

## Dominion Marine Association's Annual Meeting.

The annual meeting was held in Ottawa, Feb. 16, the President, L. Henderson, Managing Director, Montreal Transportation Co., in the chair.

The executive committee presented a comprehensive report over the signatures of L. Henderson, President, and F. King, Counsel, showing that the tonnage enrolled continues to increase, the steam tonnage now being approximately 200,000 net registered tons, and the barge or sailing tonnage remaining about the same at approximately 33,500 tons. The report dealt in full detail with the past year's work, including the following subjects:—Legislation; Canada Shipping Act; Marine Conventions Act, 1914; Workmen's Compensation Act; bill to place inland vessels under the Board of Railway Commissioners; Seamen's Union Bill, United States; development of power at Sault Ste. Marie, Ont., and Waddington, N.Y.; pollution of navigable waters; grain cargoes, discrepancies in weighing and the bill of lading, grain trimming, dispatch in loading and Lake Shippers' Clearance Association, automatic weighing machines; canals, lock entrances, bridge semaphores, canal gates, canal draught, occasional canal damages; canal statistics; customs report of entry by Canadian vessels into Lake Michigan; load lines and deck loads; rules of the road; rules for life saving appliances international convention on unification of certain rules of law relating to the limitation of liability of owners of sea-going vessels; pilotage on the Upper St. Lawrence; Dominion Wreck Commission; masters' and mates' certificates; shipping coal ex warehouse; screening bituminous coal in bond; Montreal harbor improvements; aids to navigation; lake disaster fund.

The report was unanimously adopted. Of the four members of the executive committee who retired by effluxion of time, A. E. Mathews, Mathews Steamship Co., Toronto, and Dennis Murphy, Ottawa Transportation Co., Ottawa, were reelected. W. L. Reed, Canadian Northwest Steamship Co., Toronto, and W. E. Burke, Canada Steamship Lines, Montreal, were elected in place of F. S. Wiley, Canadian Northwest Steamship Co., and J. W. Norcross, Canada Steamship Lines.

The other members of the committee, whose terms expire in 1916 and 1917, are:—L. Henderson, Montreal Transportation Co.; H. W. Richardson, Great Lakes Transportation Co.; H. H. Gildersleeve, Northern Navigation Co.; G. E. Fair, Farrar Transportation Co.; H. W. Cowan, Canada Steamship Lines; C. B. Harris, Canadian Lake and Ocean Navigation Co. and Merchants Mutual Line, Toronto; S. V. McLeod, Algoma Central Steamship Lines, and A. A. Wright, St. Lawrence and Chicago Steam Navigation Co.

The executive committee elected A. E. Mathews, President; H. W. Richardson, First Vice President; and W. E. Burke, Second Vice President.

The association, in conjunction with the Canadian Lake Protective Association, voted \$750,000, to be divided between the Red Cross Society and the Belgian Relief Fund.

The Department of Marine has issued notice to mariners relative to the closing of certain Canadian ports, should occasion arise, and the establishment of examining stations at Halifax, Quebec and Esquimaux. Detailed instructions are given, which must be followed by all vessels making port.

## The Future of Canadian Pacific Railway Steamship Operations.

In an interview in New York recently, Sir Thomas Shaughnessy, President, C.P.R., is reported, when questioned with reference to the company's application to Parliament for authority to lease or charter its vessels to a company to be formed for the purpose, to have made the following statement:—"What is planned is merely an organization for simplifying management. We are proposing, indeed we are now forming a shipping company which will take over our own ships and probably some others. This shipping company will, in reality, be a subsidiary company for the handling of our ocean traffic, so as to keep this part of our business quite apart from the management of the railway. It is merely an internal arrangement—we want to put our steamship business in the same relation to the railway company as if it were an independent steamship company. This, we are sure, will mean increased efficiency and prove beneficial to our shareholders."

It is probable that the "close working agreement" which has been in operation for some time, will be concluded by the inclusion of the Allan Line vessels in the new company being formed.

During 1912 numerous changes took place in the management of the Allan Line, including the retirement of Sir Montagu Allan, B. J. Allan and J. Smith Park from the Board, and the election of Sir Frederick W. Taylor, T. Reynolds and Sir Thomas Skinner in their places. The fact of Sir Thomas Skinner being a director of the C.P.R. was commented on at the time as being likely to confirm the reports of closer future relations between the Allan Line and the C.P.R.

At the end of 1912 it was announced that the register of joint stock companies in Edinburgh, Scotland, showed that of the 60,639 shares in the Allan Line Steamship Co., 57,637 were held by the Royal Trust Co., Montreal.

## The Building of Submarines in Canada.

In the House of Commons on Feb. 11, Hon. W. Pugsley, M.P. for St. John, N.B., moved for a copy of correspondence relating to the purchase by the Government of two submarines ordered originally for the Chilean Government. In the course of the discussion he said:—I was pleased to observe the other day in Canada, a paper published in London, a dispatch from Montreal, or from New York originating in Montreal. I am sorry the Minister of Militia is not in his place. The dispatch is as follows:

"A telegram received in New York from Montreal, according to Reuter, says:—'To meet the exaggerated stories published in the United States, the Canadian Militia Department has authorized the statement that there is no reason why the facts concerning the construction of submarines in Canada should not be published. They are as follows: The keel of eight first-class units have already been laid down by the Canadian Vickers Company here, and it is expected that several will be ready in August next. The plant is running at full capacity.'"

I would ask the Minister of Marine and Fisheries if that statement is correct?

Mr. Hazen: As to whether the Militia Department authorized the statement I do not know.

Mr. Pugsley: As to the fact?

Mr. Hazen: As a matter of fact, I think submarines are being built by the Canadian Vickers at Montreal.

Mr. Pugsley: For whom?

Mr. Hazen: I presume for the British Government.



## The Safety of Navigation in the Bay of Fundy.

R. E. Armstrong, Secretary, Board of Trade, St. John, N.B., wrote recently to *Shipping Illustrated*, as follows:

In a recent issue, under the heading of "Marine Insurance," you say: "The loss of the steamer Navarra at Tusket Islands, Bay of Fundy, is the second which occurred last year in that vicinity. In Jan., 1914, the R.M.S.P. liner Cobequid was totally lost, and unfortunately there was serious loss of life."

You also refer to the wreck of two other steamers, one of which, the Gerald Turnbull, was wrecked on Gannet Ledge in 1913, and the other—the Bonavista—in Mar., 1912, and you close with the remark that "in less than three years four fine steamers have been wrecked in this Bay."

This is scarcely a fair statement of the case, and in one respect, at least, it is absolutely false. The Bay of Fundy, as an enclosed sheet of water, is really confined to the area included within a line drawn from the southern extremity of Brier Island to the opposite shore of the State of Maine; so that, if this area is accepted, three at least, if not all four, of these disasters you have referred to occurred outside the Bay of Fundy, on the Atlantic shore of Nova Scotia. If you accept Cape Sable as the point at which Bay of Fundy waters begin, then a line drawn across to the U.S. shore will bring you to Portland, Me. I do not think that, as an American journalist, you would be willing to admit that all or any of the marine disasters which occur at Portland, Me., or east of it on the coast of Maine, should be laid at the door of the Bay of Fundy. If this reasoning is good so far as the northern side of the Bay of Fundy is concerned, then it should also hold good when applied to the southern side, and all accidents which occur below Brier Island should be excluded from the Bay of Fundy account and charged up to the Atlantic coast.

The statement that there was a serious loss of life when the Cobequid was wrecked is untrue. Not a single life was lost during that wreck, although a heavy storm prevailed at the time.

Furthermore, in almost every case that you have referred to it was shown that the casualty was due to the navigators themselves and not to any particular danger that lurked in the waters.

The Marine Court, in its finding on the Cobequid case, stated: "The court is unanimous in its opinion that the stranding and

ultimate loss of the s.s. Cobequid was caused by the grave error of judgment of John Howson, the master. . . . The court therefore severely censures the master, but on account of the very efficient and satisfactory manner in which everything was carried out on board his ship for the safety of the passengers and crew, after the stranding, does not deal with his certificate."

In the case of the s.s. Navarra, Capt. Demers, the Dominion Wreck Commissioner, described the conduct of Capt. Milliken and his officers as "culpable errors of judgment." The master's certificate was suspended for 10 months, the second officer's for 6 months, the chief officer's for 3 months.

In the face of these findings, it does not seem fair that the Bay of Fundy should be charged up with these disasters. There is ample room in the Bay of Fundy for a ship to be navigated with perfect safety, but if navigators are careless, or if they put to sea in an unfit condition, the blame for the disaster that occurs should be placed on the proper shoulders.

Statistics prepared by this Board from Government returns of wrecks show that during 18 years subsequent to 1896, with a total tonnage of 42,029,262 tons entering the port of St. John, the casualty average was only 0.033 of 1%. This statement was made up from Cape Sable. The figures are very low, indeed, and should go far to establish the almost absolute safety of the Bay of Fundy from a navigator's standpoint.

If it were necessary, it would be quite easy to establish, by comparison, that not only were wrecks fewer in the Bay of Fundy than in many other largely-frequented waters, but that the loss of life was very much less. Not for a great many years has there been any serious loss of life in Bay of Fundy waters.

### New Steamships for C.P.R. Atlantic Service.

The two vessels which are under construction in Great Britain for the C.P.R.'s Atlantic service, and which it was announced were to be named Melita and Medora, have been named Melita and Minnedosa. They will be of the one cabin type, with accommodation for 500 cabin passengers and 1,500 third class passengers. The public rooms, consisting of large lounge, smoking

room, dining room, gymnasium, etc., will be elaborately decorated, and the dining room will have accommodation for 300. The third class dining room will have capacity for 550. In the cabin accommodation, there will be about 50 two berth rooms.

The propelling machinery will consist of combination turbine and reciprocating engines driving three screws. Each of the vessels will be equipped with Babcock and Wilcox patent davits, which will enable the lifeboats to be launched from either side of the vessel, even should there be a considerable list. The vessels will be built with the cruiser stern, giving greater stability and seaworthiness, while every device for the safety of passengers will be provided, including double bottom to the hulls, wireless telegraphy and submarine signalling apparatus. The dimensions are: length overall, 520 ft.; beam, 67 ft.; depth to bridge, 46 ft.

### The Future of the St. Lawrence Canal Route.

At the recent annual meeting of the Canadian Society of Civil Engineers, the retiring President, M. J. Butler, C.M.G., in speaking of the transportation problem, said:—"We have as a nation undertaken the task of forcing our outlets against the line of least resistance. The Atlantic seaboard is the outlet for the products of the prairies situated some 1,500 miles inland. Our efforts in building railways with easy curves and grades, the enlargement of our canal system and the improvement of rivers, and particularly of the St. Lawrence route, have but the one object of putting a few more cents a bushel into the pockets of the farmers. The enlargement of the Welland Canal will allow the larger type of vessel of 300,000 bush. capacity to pass down Lake Ontario and the St. Lawrence River to within 120 miles of Montreal. Storage elevators will be erected at or near Prescott, and 1,000 ton barges will be towed through the present canal system to Montreal. Ultimately, the larger lake vessel will come through to Montreal, as it is quite practicable and within the resources of the country to convert the St. Lawrence River into slack water navigation by the building of eight dams with duplicate locks, and, as an incident, develop the greatest water power in the world, aggregating over 4,000,000 h.p., eliminate the ice jams, and make practicable the navigation of the river in winter by the aid of powerful icebreakers.

### List of Steam Vessels Registered in Canada During December, 1914.

No.	Name	Port of Registry	Where and When Built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Engines, Etc.	Owner or Managing Owner	
134103	Mary H. Cann	Yarmouth, N.S.	Mahone Bay, N.S.	1914	69 4	17 4	7 4	58	24	14 n h.p.sc.	Hugh Cann & Son, Yarmouth, N.S.
134104	Amson	New Westminster B. C.	Port Coquitlam, B.C.	1914	115 6	30 0	6 7	436	277	13 " pa.	Minister of Public Works, Ottawa
134224	Sheby	Ottawa	Sunderland, Eng.	1912	290 0	40 7	17 8	2268	1341	222 " ps.	Minister of Railways and Canals, Ottawa
116573	Valcartier (1)	Fort William, Ont.	Cleveland O.	1903	361 0	48 2	24 0	3755	2248	147 " ps.	Lake Commerce, Ltd. Toronto
		(1) Foreign name.	W. H. Mack.								

(1) Foreign name, W. H. Mack.

### List of Sailing Vessels and Barges Registered in Canada During December, 1914.

No.	Name	Port of Registry	Rig	Where and When Built	Length	Breadth	Depth	Reg. Tons	Owner or Managing Owner	
134254	L.W.S. Co., No. 1.	Winnipeg	Barge	Winnipeg	1911	188 5	33 5	8 0	423	Lake Winnipeg Shipping Co., Winnipeg
134255	" " 2.	"	"	"	1911	188 5	33 5	8 0	423	"
134256	" " 3.	"	"	"	1912	180 5	37 0	8 0	458	"
134257	" " 4.	"	"	"	1912	179 5	33 5	9 0	491	"
130516	M. A. Belliveau	Weymouth, N.S.	Schr.	Belliveau Cove N.S.	1914	115 0	30 2	10 2	199	Belliveau, et al., Belliveau's Cove, N.S.
134396	Majorie E. Bachman	Lunenburg, N.S.	"	Shelburne, N.S.	1914	109 0	26 4	10 8	99	J. E. Bachman, M.O., Lunenburg, N.S.
134444	Quebec	Quebec, Que.	"	Capucins, Que.	1914	94 7	25 6	6 7	97	Richardson Co., St. Jerome de Matane, Que.
14248	Robert J. Dale	Lunenburg	"	Liverpool, N.S.	1914	113 2	28 6	10 4	198	Ritcey, M.O., La Have, N.S.



It is a duty which our Government may well undertake at the earliest possible moment, to secure a hydrographic and topographic survey of the St. Lawrence, so that accurate estimates of cost may be made and proper regulations may be drawn up, so to regulate proposed power developments owned by private corporations that each may be brought into a component part of the completed whole."

### Great Lakes Protective Association.

This Association, at its annual meeting in Detroit, Mich., recently, decided not to increase its share of insurance risk upon vessels owned by members of the association, unless future developments in the European war made such action necessary. The association furnishes 25% of this insurance. Foreign companies are prominently represented among the underwriters, who insure the association's vessels for the other 75%. Marine men argued before the convention that the percentage of loss has been so small the association should increase its share of the risk to 50%. The majority of the members voted, however, to make no change at present unless conditions abroad make it advisable to reduce the amount of insurance given to foreign underwriters. The advisory committee was authorized to watch developments in Europe and to call a meeting of the association if it should be thought advisable, to change the insurance system.

As proof that the association has been successful in lowering insurance charges J. S. Ashley, chairman of the committee, presented figures showing the actual cost each year from 1905 to 1914 for full hull insurance on the steamship L. C. Hanna, the period covering five years preceding and five years subsequent to the beginning of the association. This vessel came out in 1905. Her gross registered tonnage is 6,356. She has been insured for her full hull insurance value ever since. Following is the actual cost to her owners each year, including commissions paid to brokers from 1905 to 1914 inclusive:

Cost.	Cost.
1905.....\$10,702	1910.....\$17,916
1906.....11,686	1911.....16,820
1907.....11,642	1912.....16,307
1908.....16,200	1913.....14,742
1909.....16,200	1914.....11,477

There was a steady increase in cost from 1905 up to and including 1910, the year following the formation of the association, and that this increased cost in 1910 was approximately \$7,000 more than it was in 1905 or 68%. There has been a steady decrease since 1910 and the 1914 cost was very nearly down to the cost of 1905. The figures of 1913 include an extra assessment of \$1,642 made by the association and which was necessary on account of the terrible disaster of Nov. 9 in that year. No credit has been taken in any of these years for profits which have been made on the percentage insured by the association. Had this profit been deducted from 1914 the cost for that year would show at approximately \$9,977.

Nineteen fourteen was a lean year for Great Lakes vessel owners, due to reduction in the ore movement, which showed a decrease of 34% from 1913, according to the report of W. Livingstone, President of the Lake Carriers' Association. Fifty-four sailors lost their lives in shipwrecks, which was "a rather high average," in the words of the President. Twenty-five vessels were lost during the season.

The New York State Barge Canal will, it is announced, be in operation for 78 miles west of the Hudson River during the coming summer, and the entire canal from the Hudson River to Lake Ontario will be ready for operation during the summer of 1916.

### Russian Government Purchases Reid Newfoundland Co's s.s. Lintrose.

It is announced from St. John's, Nfld., that the Russian Admiralty has purchased the Reid Newfoundland Co's s.s. Lintrose, for icebreaking service in the neighborhood of Archangel. It is stated that negotiations were commenced some time ago, but were suspended owing to the Dominion Government's offer of the icebreaking s.s. Earl Grey which was purchased and sent to Russia, but was not successful in keeping the harbor open. The negotiations for the Lintrose were then resumed and the vessel was taken from the Port aux Basques North Sydney route for inspection and test at St. John's before a representative of the Russian Embassy at Washington, D.C., and a shipbuilding expert from the U. S., and the purchase was completed.

She was built at Newcastle upon Tyne, Eng., in 1913, and was specially designed for operation in heavy ice. Her dimensions are, length 255 ft., beam 37 ft. She is equipped with single screw triple expansion engines, supplied with steam by four large boilers under forced draught, and is capable of running at 15½ knots an hour. Excellent passenger accommodation is pro-



The Steamship Lintrose.

vided for 30 first class and 150 second class passengers, with electric lighting and all up to date equipment.

Toronto Harbor.—Work on the improvement will go on this year without interruption, \$1,000,000 being provided. The Secretary, A. Lewis, made the following statement, recently: "When the war began we interviewed the Government and were assured that the money to carry on the work would be forthcoming this year. A million was voted last year, of which \$200,000 was left over as a balance, and is included in the million just put into the estimates. The contracts will be proceeded with. We have 5,700 ft. of the western seawall cribbed, and this will be capped with cement and the cribwork extended by 5,000 ft. in front of Parkdale, 65 ft. of substructure in the channel for the industrial district was placed last year and will be capped this year. The former wall will cost \$80 a lineal foot, the eastern wall \$120."

War Insurance.—An Ottawa report states that the Department of Marine is considering a scheme of war insurance, to be worked by the Government, or under Government guarantees. It is also stated that steps will be taken to secure the release of some of the vessels held as prizes, for operation on the Canadian route, in order to relieve the shipping situation caused by the deficiency of tonnage due to the Admiralty requirements.

### The Grounding of the s.s. Assiniboia.

The enquiry into the cause of the grounding of the C.P.R. s.s. Assiniboia on Bad Neighbor Shoal, Cove Island, Georgian Bay, on July 2, 1914, was held at Toronto, Feb. 18, before Capt. L. A. Demers, Dominion Wreck Commissioner, with Capts. J. D. Foote and H. W. LaRush, as nautical assessors. The judgment was as follows:—

After carefully reviewing the evidence adduced, we have come to the conclusion that the master of the Assiniboia adopted every method to navigate his vessel carefully, but owing to the current which he was not aware existed at the time, as they are irregular, it is evident that his vessel drifted from the course he thought he was making. Whilst we maintain that the fog horn is a secondary aid to navigation, and the sounds cannot be absolutely relied upon, owing to air currents and prevailing winds deflecting the sounds and giving a navigator possibly a wrong impression of his position, it behoves masters of ships to adopt the greatest measures of precaution. In this instance these measures were adopted and had the fog horn been sounded it is possible the mishap would not have happened, and we cannot but exonerate the

master from all blame with regard to the grounding of his vessel. The court has much pleasure in making the statement that it is the first time it has had the opportunity of examining a log, so carefully and neatly kept, without erasures or marginal notes.

With regard to the lighthouse keeper we cannot but state that he has performed his duties in a very perfunctory manner. He has absolutely disregarded the regulations which have been submitted to him with respect to keeping 20 lbs. pressure on the reserve tank in order to be able, in as short a time as possible, to operate the fog horn, which is absolutely necessary, as fogs come down very suddenly in that district. Also the fact of placing in charge a boy of 16 years, apparently intelligent, but not realizing the importance of the work he had to perform, is a very grave danger to the safety of shipping at that place, and does not meet with the requirements of rule 4, which says that at least one competent, able bodied man must be in charge at all times. On the whole we cannot express any other opinion than that there has been negligence, not only on this occasion, but on others which have been proved by witnesses.

The Canadian Society of Civil Engineers' Victoria Branch opened its new quarters in the Belmont House, Victoria, B. C., Feb. 5, with a reception and entertainment.



### Atlantic and Pacific Ocean Marine.

The C. P. R. s. s. Metagama is scheduled to sail from Liverpool, Eng., on her maiden trip, Mar. 26.

It is reported from Vancouver, B.C., that the service which was started recently by Russian steamships between Vancouver and Vladivostock, may have to be suspended, owing to lack of vessels, many of which are being used in Government service.

The case of the C.P.R. against the owners of the s.s. Storstad, for \$3,000,000 damages sustained through the sinking of the s.s. Empress of Ireland by the Storstad, commenced in the Admiralty Division of the Exchequer Court at Montreal, Feb. 15.

Panama Canal tolls in December aggregated \$411,896, the highest monthly record since the opening of the canal. The cargo tonnage was 446,415 tons, not including two lumber cargoes containing 5,232 m. ft. Ninety nine vessels passed through the canal during the month.

The United States Government has thanked the Dominion Government for the assistance rendered by the s.s. Lady Laurier in saving the s.s. Camino, which broke down while en route from San Francisco to Rotterdam with supplies for the Belgians, and which was towed into Halifax at the end of January.

The Allan Line s. s. Mongolian arrived at St. John's, Nfld., Feb. 8, from Philadelphia, en route for Scotland, with a large hole in her bow, caused by striking a rock outside the harbor. A portion of the cargo had to be discharged before repairs could be undertaken.

Canada Steamship Lines is reported to be making arrangements, in conjunction with Furness Withy & Co., for placing such of its vessels as are suitable for ocean service, in the ocean grain carrying business on the re-opening of navigation. It is reported that the company has about 10 vessels which can take part in such service.

The steamship companies have completed arrangements with the Russian Government whereby they may book Russian and Finnish emigrants at Helsingfors or Hango, such passengers undertaking to find their way to these ports. Such passages are confined to women, children and noncombatant males, and all must have passports.

The Allan Line s.s. Corsican, resumed her mail service between England and Canada at the end of January, after having been in the Admiralty service since the commencement of the war. The company's s.s. Pretorian, which was being used on the Liverpool route, has been returned to the Glasgow route.

The Usher Steamship Co.'s s.s. Usher has been sold to A. Richter and Co., Newcastle, Eng., for about £28,000. She was built at Glasgow, Scotland, in 1901, and is 3,594 tons gross, 2,350 tons register, with a deadweight capacity of 6,200 tons. The Usher Steamship Co. is owned by Hugh Cann and Sons, Ltd., Yarmouth, N. S.

The Allan line s.s. Numidian is reported to have been sold to British owners for £13,000. She was built at Glasgow, Scotland, in 1891, with steel hull, and equipped with triple expansion engines with cylinders 30, 50 and 80 x 60 ins., 582 n.h.p. Her dimensions are, length 400 ft., breadth 45.2 ft., depth 30.6 ft.; tonnage, 4,836 gross, 3,107 register.

The British s.s. Chalister, what is stated to be the first of five vessels to be engaged in a round the world service by way of the Panama Canal, arrived at Victoria, Feb. 11. This vessel on this voyage originally sailed from New York some time ago with cargo for Oriental ports, and instead of returning to New York by the Suez Canal route, was

ordered to proceed from China to British Columbia for coal, and then via the Panama Canal for New York.

The contract for the repair of the s.s. Camino, which was under charter to U. S. interests for carrying food supplies to Belgians, and which was badly damaged during rough weather recently, has been awarded in Halifax, N.S. Among other repairs is a new rudder, which is being supplied by the Nova Scotia Steel and Coal Co., New Glasgow.

The Norwegian s. s. Imataca, was reported at Halifax, N. S., Feb. 8, by wireless, to have been abandoned in mid ocean, the crew having been rescued by the s. s. Elzorore, which stated that the Imataca was in a sinking condition and a menace to navigation. She was bound from Scotland to Baltimore in ballast. She was built at Middlesbrough, Eng., in 1909, and was owned in Bergen, Norway.

The Canadian Trading Co., Ltd., has been organized and has announced the chartering of the British schooners Albert Meyer and Coquitlam City, the former for March loading in British Columbia for New Zealand ports, with Australian ports optional, and the latter for April loading. W. R. Dockrill, Vancouver, B.C., is President, and C. M. Pettibone, Seattle, Wash., is Vice President. The President sailed, recently, for Vladivostock, Russia, to investigate trade possibilities with Siberia and Manchuria.

Montreal officials of the White Star-Dominion Line are reported to have received information from England, that the name of the s.s. Zeeland has been changed to Northland, the change being necessary as the booking by this vessel for Canadian territory has been affected on account of the decided anti-German sentiment and the construing of the name as German. The item in a Montreal paper continues that the Northland and Vaderland are now carrying two classes of passengers, etc. If the name of the first vessel, which was not German, was changed, what about the name of the second one, which is distinctly German?

The alterations necessary to convert the former C.P.R. s.s. Empress of India into the hospital ship Loyalty, were completed recently at Bombay, and the whole was inspected by the Governor of Bombay before sailing from that port. The changes were carried out under the supervision of offices of the Indian Medical Service. Altogether there are about 500 beds available on the vessel, and there is a completely equipped operating room. The vessel, which, while she was acting as an auxiliary cruiser, was painted a dull grey, has been repainted white, with black strips on the water and deck lines, with the red cross amidships. She was purchased and equipped by the Maharajah Scindia of Gwalior.

### Maritime Provinces and Newfoundland.

The Dominion Government s.s. Tyrian is being repaired at Halifax, N.S. The amount of the contract is \$9,841.

The Reid Newfoundland Co.'s s. s. Bruce was seriously damaged by ice early in February at Port aux Basques, Nfld. The cost of repairs is estimated at \$20,000.

The Cabot Steam Whaling Co.'s whaling steamship Cabot, was offered for sale by tender, by the liquidator of the company at St. John's, Nfld., Feb. 20.

The British s. s. Kendal Castle arrived at Louisburg, N. S., Feb. 6, under charter to the Dominion Iron and Steel Co. She will load a general steel cargo for British ports.

Owing to damage by storm to the east breakwater pier and lighthouse at St. Martins, N.B., the exhibition of the fixed red light has been discontinued until

further notice. The lighthouse will shortly be moved 100 ft. farther in on the breakwater.

The Lehigh Valley Coal Co. is reported to have acquired, through local interests, the shipyards, docks and mill, formerly belonging to the Hildyard estate, along the harbor front at St. John, N.B., at a cost of \$150,000.

The Red Cross Line s.s. Morwenna, when leaving Halifax, N.S., for St. John's, Nfld., Jan. 31, collided with the ferry steamboat Chebucto, and sustained considerable damage to her bow, all above the water line.

The Nova Scotia Admiralty Court on Feb. 16, awarded \$3,250 as salvage to the owners of the s.s. Skogland, for towing the s.s. Desola into North Sydney about a month ago. Of the amount awarded, \$2,500 goes to the owners and the balance is divided between the officers and crew.

The Newfoundland Government has announced that Norwegian vessels now at Sydney, N.S., will be permitted to engage in the seal fishery this season, but they must comply with the law requiring all sealing vessels to carry wireless telegraph installations.

A press report from Vancouver states that the C.P.R. s.s. St. George, which has been operated in the company's Bay of Fundy service for some time, is to be transferred to the Pacific coast, on account of the two new Princesses, which were to have been on the coast service for the C.P.R. this spring, having been requisitioned by the Admiralty. The report states that the St. George, prior to her purchase by the C.P.R., was operating in the Channel service between Dover and Calais. This is incorrect, as the C.P.R. purchased her from the Great Western Ry., by which she was operated between Rosslare, on the southwest coast of Ireland, and Fishguard in South Wales, for which service she was built. Enquiry at Montreal elicits the information that the report is incorrect.

The s.s. Rose Castle, which is being built specially for the coal trade between Sydney, N.S., and Montreal, was launched at Sunderland, Eng., during January. She is built on the Isherwood system with single deck, and two bridges. Water ballast is provided for throughout the double bottom, in the fore and aft peaks and in wing tanks. There are 10 large hatches, 34 ft. wide with hinged steel covers. Two derricks are fitted to each hatch, and derricks are fitted to both masts for lifting and lowering hatch covers and handling heavy weights. There are 12 steam winches, steam and hand windlass, steam steering gear with rudder brake worked by telemotor from the wheel house and flying bridge and also from the top of the steering gear house. There are steam ash hoist and ash chute, and the vessel will be equipped throughout with electric light. The propelling machinery consists of triple expansion engines with cylinders 28½, 47 and 79 x 54 ins., supplied with steam by three multitubular boilers at 180 lbs., fitted with forced draught. It is expected that she will load a full cargo of coal in six hours and discharge by grabs in about the same time. Her dimensions are, length 470 ft., breadth 58 ft., depth moulded 33 ft. 9 ins., with a deadweight capacity of over 11,000 tons on a 25 ft. draught.

### Province of Quebec Marine.

The Dominion Government s. s. Montcalm sailed for Anticosti Island, Feb. 22, on the winter mail service. The ice in the neighborhood was reported to be very heavy.

The Montreal Harbor Commissioners are reported to have acquired the southwestern portion of lot 28, Hochelaga ward, containing 18,390 sq. ft., bound on the north by Notre Dame St. East, for \$58,871.25.



The Department of Marine announces that on the opening of navigation, the Prince Shoal lightship no. 7, will be moored in a new position about a third of a mile northward of its old position, in the alignment of Pointe Noire range lights, 4.42 miles from Pointe Noire front range light, off the mouth of the Saguenay River in the St. Lawrence.

A London, Eng., cable dispatch states that judgment for £466, balance of contract price due for transporting an icebreaker from Smith's Dock on the River Tees to Quebec, has been given to Rea and Co. at Liverpool. The icebreaker was built for the Quebec Harbor Commissioners at a cost of £18,500, and Rea and Co. were given a subcontract to deliver it. The vessel was transported on the understanding that they would receive certain money retained by the Commissioners, but the latter refused to pay a total of £2,000 on account of claims for damages through delay. It was held that plaintiffs had been prevented from securing money on account of defendants' acts.

### Ontario and the Great Lakes.

The steam tug Harrison, owned by John Harrison and Sons Co., Owen Sound, is being equipped with wireless telegraph by the Marconi Wireless Telegraph Co. of Canada.

The Goodrich Transit Co., Chicago, Ill., which operated the s.s. Arizona to Georgian Bay ports, last season, has announced that it has been found necessary to discontinue the service for the forthcoming season on account of the loss of one of its vessels.

The Cleveland and Buffalo Transit Co. announces that the same service will be operated during the coming season, as was run last year, between Cleveland, Ohio, and Port Stanley, Ont., the s.s. State of Ohio making the trip three times a week.

The Port Huron and Sarnia Ferry Co., it is reported, has been ordered to report and clear its vessels at Sarnia, each trip between Sarnia and Port Huron, on account of their now being operated as freight and passenger steamboats and not ferries.

It was announced at a meeting of the London, Ont., Board of Trade, recently, by Sir Adam Beck, that the Great Lakes Transportation Co., of which James Playfair is President, is planning the construction of a grain elevator at Port Stanley, to cost about \$700,000.

The Great Lakes Protective Association is taking steps to obtain a uniform rate for insuring vessels belonging to members of the association. The fact that all vessels in the association work under the same conditions will be brought to the attention of the underwriters.

J. Frater Taylor, President, Algoma Steel Corporation, in addressing the Sault Ste. Marie Board of Trade, Feb. 17, stated that he could see no reason why there should not be access for lake vessels to the ocean, by way of St. Lawrence, providing for ocean going steamships passing right up to Sault Ste. Marie.

It was announced at Detroit, Mich., recently, by C. F. Marvin, Chief of the U.S. Weather Bureau, that a naval wireless telegraph station will be built on Lake Michigan, near Chicago, during the year, to be used in dispatching storm warnings and general weather information to vessels on the Great Lakes.

Press reports state that about \$2,100,000 will be spent on harbor improvement works at Toronto during the current year. A considerable amount of work was done last year, and this will be continued. Some of this work is being carried out under the

Toronto Harbor Commissioners, and other portions by the Dominion Public Works Department.

The United States s.s. Tampa, which was sunk on the Canadian side of the St. Clair River, about 22 miles south of Sarnia, in 1911, was sold by auction at Sarnia, Feb. 2, for \$300. She was built at West Bay City, Mich., in 1890, and rebuilt in 1899. She is equipped with triple expansion engines, with cylinders 20, 32 and 54 x 42 ins., 1,000 i.h.p. at 76 r.p.m., supplied with steam by two Scotch boilers, 12 ft. long by 11 ft. diam. at 150 lbs.; tonnage, 1,972 gross, 1,632 register.

The U.S. Lake Survey reports the levels of the Great Lakes in feet above tide water for January, as follows: Superior, 601.81; Michigan and Huron, 579.44; Erie, 571.09; Ontario, 244.70. Compared with the average January levels for the past ten years, Superior was 0.22 ft. below; Michigan and Huron, 0.63 ft. below; Erie, 0.72 ft. below, and Ontario, 0.97 ft. below. It was anticipated that during February, Superior would drop 0.2 ft., Michigan and Huron would remain stationary, Erie would drop 0.1 ft., and Ontario rise 0.1 ft.

In a recent case against the Northern Navigation Co., for damages for the failure of the company to rescue a seaman who fell overboard through his own negligence whilst skylarking, it has been held that there is no legal obligation on a vessel owner under such conditions, on the ground that the voluntary action of the seaman in placing himself in a position of danger from which there was no escape except through the owner's intervention, could not create an obligation to stop the vessel or adopt other means to save him, and that no term was expressed or implied in the contract of hiring, that the owner should protect him from the consequences of his own negligence.

Under a deed of assignment for the benefit of the creditors of the Temiskaming Navigation Co., tenders are being received by Jas. Hardy, Toronto, for the purchase of the steamboats Meteor, Temiscamingue and Jubilee, the hull of the launch Kiask, 5 scows, and wharf properties on Lake Temiskaming, all the property of the Temiskaming Navigation Co., and the steamboat Silverland, the property of the Haileybury Navigation Co. The chief details of the steamboats are as follows: Meteor, built at Opemican, Que., in 1897; length, 130.5 ft.; breadth, 27 ft.; depth, 7.4 ft.; tonnage, 299 gross, 204 register; engines, 165 n.h.p. driving a screw. Temiscamingue, built at Temiskaming, Que., in 1898; length, 133 ft.; breadth, 22.5 ft.; depth, 6.5 ft.; tonnage 295 gross, 213 register; engines 21 n.h.p. driving a screw. Jubilee, built at Kingston, Ont., in 1897; length, 84.2 ft.; breadth, 15.4 ft.; depth, 5 ft.; tonnage, 177 gross, 78 register; engine 10 n.h.p. driving a screw. Silverland, built at Haileybury, Ont., in 1909, length, 85.4 ft.; breadth 17 ft.; depth, 6.7 ft.; tonnage, 92 gross, 53 register; engine, 13 n.h.p. driving a screw.

### Manitoba, Saskatchewan and Alberta.

The Canadian Hydrographic Survey has prepared charts of the Hudson Bay and Strait, and of the approaches to the Nelson River in Hudson Bay, copies of which may be had from the Department of Naval Service.

A site has been purchased for the construction of a dock at Winnipeg, and negotiations are in progress for another. It is expected that work on one of them, at least, will be proceeded with during this year. The Dominion Government appro-

priated \$200,000 last year for harbor work at Winnipeg and St. Boniface.

The shipping of goods to the Arctic circle has undergone many changes since the Hudson's Bay Co. commenced with dog teams and flat bottomed boats. Recent shipments from Edmonton, Alta., go by Edmonton, Dunvegan and British Columbia Ry. to McLennan, thence by the Canada Central Ry. to within 20 miles of the Peace River Crossing, to which latter point they are taken by teams, and loaded on a steamboat for shipment to the Chutes, and transhipped to another vessel which will take them to northern points along the Slave and Mackenzie Rivers.

### British Columbia and Pacific Coast.

The Imperial Oil Co. has placed a contract locally for the construction of a creosoted pile wharf at Prince Rupert, between the dry dock wharf and Cameron Bay. It is stated that work will be commenced almost immediately.

The Achates Tow Boat Co., Ltd., has been incorporated under the British Columbia Companies Act, with \$30,000 capital and office at Vancouver, to build, own and operate steam and other vessels and to carry on a general tow boat business.

The Dominion Government fisheries cruiser Galiano, which stranded near Esquimalt recently, while assisting a Norwegian barque, which was in danger, is undergoing repairs at Esquimalt. A new stern post is to be fitted, and about 13 plates and a number of frames are being straightened.

Dominion Government and Vancouver civic officials visited the alterations being carried out at Brockton Point recently, in connection with the new lighthouse there, and G. Robertson, Marine Agent, Vancouver, expressed satisfaction as to the progress of the work.

The Border Line Transportation Co.'s s.s. Despatch, which was formerly operated between Vancouver and Seattle, has been equipped with passenger accommodation, and has been placed on the run to south east Alaskan ports, in conjunction with the steamships Alki and Northland.

It is reported that the Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince Rupert, which has been idle since the commencement of the war, will be overhauled at Esquimalt, and replaced in service to Prince Rupert and Granby Bay, about April 1, when the s.s. Prince George will be withdrawn for overhauling, after which the usual Monday and Thursday sailings will be resumed.

The floating dry dock, which the contractors, Grant, Smith and McDonnell, are using in connection with their work in Victoria harbor, collapsed and sank there, during the construction of the cribs, for which the dock was used, at the end of January. The two cribs which were in the dock were ready for transfer, and were a part of 54 similar ones. Angus McDonnell is reported to have stated that the loss would not be so great as was at first anticipated, and it is possible that a marine way will be built at Esquimalt to handle the construction of the cribs.

**Lake Freight Rates.**—A bill, introduced in the House of Commons by J. E. Armstrong, M.P. for East Lambton, Ont., providing for the placing of freight rates on steamships on inland waters, under the jurisdiction of the Board of Railway Commissioners, was read a second time, Feb. 18. Considerable opposition to the proposal has developed. A similar bill, introduced last year, was withdrawn.



## The Vancouver Dry Dock Project.

Canadian Railway and Marine World published in its issues of Aug., Sept., Oct. and Dec., 1914, some information about the Dominion Shipbuilding, Engineering & Drydock Co.'s project at Vancouver. We are officially advised that it is proposed to build a drydock 1,000 ft. long by 100 ft. wide, but that in order to obtain a subsidy from the Dominion Government, if it is necessary to increase the dimensions to 1,150 x 110 ft., this will probably be done, although it is felt that for a number of years the 1,000 x 100 ft. size would be sufficient for the needs of the port.

We are also advised that the company expects to have in operation by the end of this year, the 6 buildings and the 2 marine ways, one of 1,000 tons and the other of 4,000 tons capacity, together with the full equipment necessary in each case. After 1916 it is hoped to complete the second unit, consisting of a fresh water canal and ship-building plant, while July 1, 1917, should see the completion of the drydock, which will be the final construction.

### Control of Steamship Freight Rates.—

In the discussion of the estimates in the House of Commons, Feb. 16, the Minister of Trade and Commerce stated in reference to an item of \$6,000 for the control of ocean rates that all contracts for steamship services give him the right to control rates, and that he intended to secure an expert to deal with the matter.

**Canada Steamship Lines, Ltd.**—The annual meeting fixed to be held in Montreal, Feb. 25, was adjourned to Mar. 25, as the date fixed by the bylaws did not allow sufficient time to get in all the returns and for the audit. The shareholders will be asked to approve an amendment to the bylaws changing the time of the annual meeting from February to March in each year.

**The Ontario Workmen's Compensation Board** has, on account of the difficulties encountered in deciding the limits of applicability of the Workmen's Compensation Act to vessels, placed the navigation industry in schedule 2, that is under industries, the employers in which are individually liable to pay the compensation, and assessments paid in by vessel owners are being returned.

**Canadian Registry of Shipping.**—The Minister of Marine stated in the House of Commons, Feb. 10, that 22 vessels were withdrawn from the Canadian register, since July 1, 1914, with a gross tonnage of 28,791. Of these, three were transferred to Newfoundland, three to Barbadoes, one to France, 14 to the United States and one to Spain. During the same period, 194 vessels were added to the Canadian register, with a gross tonnage of 65,842, and of these, 127 were steamships and 67 sailing vessels.

**Shortages and Overages in Grain Cargoes.**—Deputations from the Winnipeg and Montreal Grain Exchanges waited on the Premier, and the Ministers of Trade and Commerce, Marine and Fisheries, Customs and Public Works at Ottawa, Feb. 6, to protest against the change in the bill of lading adopted at a conference of lake grain carriers and shippers at Detroit, Mich., Jan. 6, and which was published in Canadian Railway and Marine World for Feb., page 76, and also to ask that the approval of the form of bills of lading be placed under the Board of Railway Commissioner's jurisdiction. The grain exchange delegates were followed by F. King, Counsel, Dominion Marine Association and H. W. Richardson of Kingston, Ont., on behalf of the vessel owners, and on the conclusion of the speeches Sir Robert Borden announced that the matter would receive due consideration.

## Mainly About Marine People.

**R. T. Holcomb**, of Hall & Holcomb, Ltd., Ottawa, who has been seriously ill for several months, is somewhat improved in health.

**J. W. Norcross**, Managing Director, Canada Steamship Lines, Ltd., returned to Montreal in the middle of February, after spending some weeks in Bermuda.

**L. Revillon**, senior member of the firm of Revillon Bros., fur merchants, and who have branches in Canada and own some steamboats in Canadian waters, died in Paris, France, Feb. 1.

**John T. Mathews**, who has been appointed Dominion Government Steamboat Inspector at Edmonton, Alta., was presented with a signet ring by a number of his friends at West St. John, N.B., on leaving there to take up his new duties.

**R. H. Alexander**, Chairman of the Vancouver Pilotage Authority since May 26,



**S. L. Penhorwood**,  
Manager, New Ontario Dock Co., Ltd.

1883, died suddenly at Seattle, Wash., Jan. 29. He was born at Edinburgh, Scotland, Mar. 26, 1844, was educated in Toronto, and went to British Columbia in 1862.

**Alexander Elder**, founder of the Elder Dempster lines, died at Southport, Eng., Jan. 25. He retired from active participation in the affairs of the company some years ago. He was a director of the Pacific Steam Navigation Co., and Chairman of the Steamship Owners' Association. He founded a chair of naval architecture in the Liverpool University, and held the Royal Society's medal for life saving.

**S. L. Penhorwood**, Manager, New Ontario Dock, Sault Ste. Marie, Ont., who has resigned and been succeeded by F. Gilchrist, formerly of Port Colborne, Ont., as mentioned in our last issue, was in charge of the property from its organization in 1901 until Jan. 15, 1915. He was born at Swansea, South Wales, Jan. 6, 1873, and has lived in Sault Ste. Marie for 30 years. He is harbor master of the port and is interested in several businesses there. A year ago he was given command of the 51st Sault

Ste. Marie Rifles, with the rank of Lieutenant Colonel. The first and second over-seas contingents were each furnished the desired quota of 125 officers and men, and he has been selected to organize the Northern Battalion from Algoma, Nipissing and Timiskaming.

**The Farrar Transportation Co., Ltd.**, held its annual meeting in Toronto, Jan. 26. We are officially advised that after taking care of the fleet's bonded indebtedness, which amounted to approximately 7% on the capital stock, a dividend of 3% was paid to the shareholders. The directors were re-elected as follows: T. I. Thomson, Owen Sound, Ont., President; E. R. Wayland, Fort William, Ont., Vice President; G. E. Fair, Toronto, Secretary-Treasurer and Manager; D. D. Lewis, Lorain, Ohio; W. E. Allen, Toronto; G. P. Pearsall, Collingwood, Ont.; C. I. deSola, Montreal; J. Shultis, Port Colborne, Ont.; M. Snetsinger, Thornbury, Ont.; E. Stubbs, Sault Ste. Marie, Ont.

**Summer Deckload Rules.**—The Dominion Marine Department, acting in line with the British Board of Trade, is relaxing the summer deckload rules for oceangoing ships. The summer deckload has not been permitted in ports in the British Isles until April 16, but will now be allowed on vessels arriving after Mar. 30. Vessels will accordingly be allowed to leave Canadian ports for the United Kingdom with summer deckloads after March 1 in the case of sailing vessels and Mar. 12 in the case of steamers. The Dominion Government, however, takes no responsibility in the case of a Canadian ship arriving in the United Kingdom before the open season.

**Georgian Bay Canal Project.**—An Ottawa press dispatch states that it is likely that the Montreal, Georgian Bay and Ottawa Canal Co. will relinquish its charter to build a canal connecting the Georgian Bay with the St. Lawrence, and will hand over to the Government the property it holds, and the results of the work done. The company was incorporated in 1894, and considerable time and money has been spent in endeavoring to get the Dominion Government to undertake the work and award the contract to the company, or to guarantee the company's bonds to enable the work to be carried through. The project has been thoroughly discussed from many standpoints, and has aroused considerable controversy, its construction being thoroughly advocated by some and as thoroughly condemned by others. An application is before the Dominion Parliament for an extension of the time within which the company may commence the authorized works.

**Suggested Blockade Running for U.S. Vessels.**—A New York shipping paper states that there appears to be some ground for the opinion expressed by shipping veterans that merchants of today do not seem to possess the same confidence in sailorly qualities that their forbears turned to such good account in running the blockade during the civil war, and continues that it is surprising that so far no serious attempt has been made to run the blockade of the German ports and elude the British warships patrolling the English Channel and the northern passage. No one questions the morality of running the blockade by neutral countries, as it is considered legitimate game for those who care to undertake it, but it should be remembered that until the present war some respect has been paid to international rules governing warfare. Running a blockade with explosive mines spread broadcast over the waters calls for a degree of foolhardiness quite outside the range of sailorly qualities.



## Transportation Conventions in 1915.

Mar. 16-18.—American Railway Engineering Association, Chicago, Ill.  
 April.—American Association of Passenger Traffic Officers, San Francisco, Cal.  
 April.—American Association of Demurrage Officers, Richmond, Va.  
 Apr. 28.—Association of American Railway Accounting Officers, Atlanta, Ga.  
 May 4-7.—Air Brake Association, Chicago, Ill.  
 May 12.—American Association of General Baggage Agents, Los Angeles, Cal.  
 May 17-19.—Railway Storekeepers' Association, Chicago, Ill.  
 May 17-20.—International Railway Fuel Association, Chicago, Ill.  
 May 19.—Association of Railway Claims Agents, Galveston, Tex.  
 May 19.—American Railway Association, Atlantic City, N.J.  
 May 20-21.—American Association of Railroad Superintendents, San Francisco, Cal.  
 May 21-24.—American Association of Freight Agents, Richmond, Va.  
 May 26-28.—Master Boiler Makers' Association, Chicago, Ill.  
 June 9-11.—American Railway Master Mechanics' Association, Atlantic City, N.J.  
 June 14-16.—Master Car Builders' Association, Atlantic City, N.J.  
 June 15.—Train Despatchers' Association of America, Minneapolis, Minn.  
 June 16.—Freight Claim Association, Chicago, Ill.  
 June 22-25.—Association of Railway Telegraph Superintendents, Rochester, N.Y.  
 June 23-25.—Association of Transportation and Car Accounting Officers, Niagara Falls, N.Y.  
 July.—American Railway Tool Foremen's Association.  
 July 14-17.—International Railway General Foremen's Association, Chicago, Ill.  
 Aug. 17.—International Railroad Master Blacksmiths' Association, Philadelphia, Pa.  
 Aug. 19, 20.—American Association of Railroad Superintendents, San Francisco, Cal.  
 Sept. 14-16.—Roadmasters' and Maintenance of Way Association, Chicago, Ill.  
 Sept. 14-17.—Master Car and Locomotive Painters' Association of the United States and Canada, Detroit, Mich.  
 Sept. 21-24.—Railway Signal Association, Salt Lake City, Utah.  
 October.—American Association of Dining Car Superintendents.  
 Oct. 4-8.—American Electric Railway Association, San Francisco, Cal.  
 Oct. 5-7.—Railway Fire Protection Association, Chicago, Ill.

## Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

Canadian Car Service Bureau—J. Reilly, Manager, 401 St. Nicholas Building, Montreal.  
 Canadian Electric Railway Association—Acton Burrows, 70 Bond Street, Toronto.  
 Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadian Express Building, Montreal.  
 Canadian Freight Association (Western lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.  
 Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday each month, 8.30 p.m., except June, July, and August.  
 Canadian Society of Civil Engineers—C. H. McLeod, 176 Mansfield St., Montreal.  
 Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.  
 Central Railway and Engineering Club of Canada—C. L. Worth, 409 Union Station, Toronto. Meetings at Toronto, 3rd Tuesday each month, except June, July, and August.  
 Dominion Marine Association—F. King, Counsel, Kingston, Ont.  
 Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.  
 Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.  
 Engineers' Club of Toronto—H. B. Wolsey, 91 King Street West, Toronto.  
 Express Traffic Association of Canada—W. H. Burr, Chairman, Toronto.  
 Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.  
 International Water Lines Passenger Association—M. R. Nelson, New York.  
 Niagara Frontier Summer Rate Committee—James Morrison, Montreal.  
 Nova Scotia Society of Engineers—A. R. McCleave, Halifax, N.S.  
 Quebec Transportation Club—A. F. Dion, Quebec.  
 Ship Masters' Association of Canada—Capt. E. Wells, 45 St. John Street, Halifax, N.S.  
 Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.  
 Western Canada Railway Club—Louis Kott, Box 1707, Winnipeg. Meetings at Winnipeg, 2nd Monday each month, except June, July, and August.

## Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

The Ohio Brass Co., Mansfield, Ohio, has issued a card folder describing and illustrating its trolley retrievers and trolley catches.

Algoma Steel Corporation.—J. Frater Taylor, President, is reported to have stated at the Sault Ste. Marie Board of Trade recently that by May its mills will probably be making rails for South Africa.

The Brown Hoisting Machinery Co., Cleveland, Ohio, announces with deep sorrow and a keen sense of loss, the death of Miss Isabel Love Wightman, who for 17 years served the company with signal ability and devotion.

Martin-Senour Co., Ltd., paint and varnish manufacturers, Montreal, have issued a complete catalogue and color chart of marine and submarine paints and varnishes for steamship and drydock owners and the marine trade in general. Copies will be sent on application.

Canadian Locomotive Co.—Aemilius Jarvis, of Toronto, President, and A. W. Wheatley, of Kingston, Ont., Vice President, were reported to have arrived in Russia early in February to negotiate with the Government for orders for locomotives, shrapnel shells, etc.

The Bird-Archer Co.—Lyndon F. Wilson, Vice President of the Railway List Co., has resigned to become Vice President of the Bird-Archer Co., of New York, manufacturers of boiler compounds, and will take up his new duties on April 1, after which he will be located at the Chicago office.

Martin-Senour Co., Ltd., paint and varnish manufacturers, Montreal, have secured the Canadian manufacturing rights of Bredell's ship bottom compositions and copper paints. It is stated that the greater portion of ship bottom compositions used in Canada heretofore have been of German origin.

Canadian Locomotive Co.—C. Goldmark, who has been with the company for some years as Superintending Engineer, has removed to New York. On the eve of leaving he was entertained at dinner and presented with a loving cup made of pine and mounted on a 10 in. base and coated with aluminum. It was turned out in the company's pattern shop.

The Herbert Morris Crane & Hoist Co., Ltd., Toronto, makers of lifting and shifting machinery, have appointed W. G. McIntosh as Sales Engineer for Toronto. He graduated from the Toronto University's Faculty of Applied Science in 1909, obtaining an honor degree in mechanical engineering, and has since had a varied experience of shop work, drawing office and field erection with Otis-Fensom Elevator

Co., Toronto Power Co., Canada Foundry Co. and Dominion Bridge Co.

John S. Metcalf Co., Chicago and Montreal.—R. P. Durham, Vice President, who has had his headquarters in London, Eng., for the past year, has been spending a holiday in the United States and also a short time in Montreal. His company is designing two elevators for Arthur Guinness, Son & Co., the Dublin brewers, for their plant at Manchester, Eng., one for barley with 835,000 bush. capacity, and one for malt with 600,000 bush. capacity. The cost is estimated at about \$600,000. The Manchester Ship Canal Co.'s elevator no. 2, for which the Metcalf Co. acted as designers and engineers, is about completed. This is also of concrete, with 1,500,000 bush. capacity, costing about \$900,000.

H. Boker & Co., Inc.—The firm of Herman Boker & Co. is now being conducted under the firm name of H. Boker & Co., Inc. It is handling the same line of goods as heretofore, consisting of Novo Superior and other steels, as well as all other lines manufactured by Sir Joseph Jonas, Colver & Co., Ltd., Sheffield, Eng. The small tools used are made in Canada or England. The new company is capitalized at \$500,000, Karl Boker of New York being President and Sir Joseph Jonas of Sheffield, Vice President. F. E. Rejall continues as Canadian Manager at 332 St. James St., Montreal. H. Boker & Co. advise us that neither the old nor new firm is German, and that there neither was nor is any German capital invested, nor any Germans connected with the company.

NOTICE is hereby given that the Annual Meeting of the Shareholders of the Victoria Rolling Stock and Realty Company of Ontario, Limited, will be held at the offices of Messrs. Osler and Hammond, 21 Jordan Street, Toronto, on Wednesday, March 3, 1915, at twelve o'clock noon, for the reception of the Annual Report and election of Directors for the ensuing year.

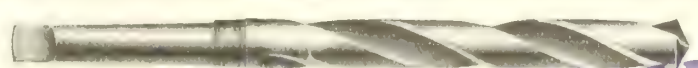
By order,  
 G. T. CHISHOLM,  
 Secretary.

Toronto, February 12, 1915.

MARINE SUPERINTENDENT of wide experience and with college training, familiar with design and upkeep of hulls, engines and boilers, first-class certificate, desires position. Box 117, Canadian Railway and Marine World.

### WANTED:

For use on Lake Ontario, two boats, capacity 600 to 1000 tons, for carrying stone. Boats with modelled bow desired. Give present location, age, full description, and price delivered at Toronto. Canadian Stewart Co., Ltd., 30 Church St., New York City.



**MORROW**  
Twist Drills

Your aim is economy in shop practice, with accuracy of results, there is no best tool obtainable, it is none too good. It will pay you to buy Morrow's.

**John Morrow-Screw & Nut Co., Limited,** - **Ingersoll, Ontario**

"MORROW DRILLS ARE GOOD DRILLS"



# Ottawa Traction Company, Limited

## First Annual Report for Year Ending December 31, 1914.

Your directors have pleasure in submitting their first annual report for the year ending 31st December, 1914, including the operations of The Ottawa Electric Railway Company.

Gross earnings of The Ottawa Electric Railway Company	\$1,096,459.22
Operating expenses and maintenance	665,226.81
Net earnings	431,232.41
Net earnings 1913	412,160.09

Increase 1914 \$19,072.32

The net earnings were disposed of as follows:

Four quarterly dividends of 3% and a bonus of 3%	\$281,535.00
Interest on bonds and loans	39,109.18
Mileage payments	15,751.16
Taxes	16,722.36
Placed to the credit of contingent account to be applied to the reduction of track renewals, car equipment, and other accounts	55,000.00
Transferred to credit of profit and loss	23,114.71
	\$431,232.41

25,321,547 passengers were carried compared with 23,987,883 in 1913, an increase of 1,333,664.

The balance at credit of profit and loss account is now \$190,273.38 and of rest account \$200,000.00.

Notwithstanding the business stringency throughout the country for the first seven months of the year, which was added to by the breaking out of the war in August, every month showed an increase in the company's gross receipts.

Nine large double truck cars were added to the rolling stock during the year. The old steel bridge at New Edinburgh was replaced by a new one costing about \$15,000.00.

Next spring it is intended to renew the Bank Street tracks from Wellington Street to Gladstone Avenue, replacing the present light rails with heavy rails. This will complete the track renewals throughout the system, a work which has been going on for a number of years past.

Your directors look with confidence to the future, and expect that when the war is over and business returns to normal conditions there will be an increase in the company's traffic even greater than in the past.

All of which is respectfully submitted.

T. AHEARN,  
President.

Ottawa, 1st February, 1915.

### THE OTTAWA ELECTRIC RAILWAY COMPANY.

#### STATEMENT OF ASSETS AND LIABILITIES DECEMBER 31st, 1914.

Assets.	
Roadbed and equipment, water power property and plant, real estate and buildings	\$3,221,474.54
Cash	7,295.00
Stores	50,065.18
Insurance paid on account of period beyond December 31st, 1914	5,000.00
Accounts receivable	1,650.00
	\$3,285,484.72

Liabilities.	
Capital stock	\$1,876,900.00
First mortgage bonds	458,000.00
Bills payable	342,609.10
Dividend No. 83, payable January 2nd, 1915	112,614.00
Interest on bonds, payable January 5th, 1915	9,540.00
Bank of Ottawa	3,798.83
Accounts payable	26,228.74
Unpaid dividends	520.67
Contingent account	65,000.00
Rest account	200,000.00
Profit and loss account	190,273.38
	\$3,285,484.72

#### Profit and Loss Account.

Dividend No. 80. April 1st, 1914 3%	\$56,307.
Dividend No. 81. July 1st, 1914 3%	56,307.
Dividend No. 82. Oct. 1st, 1914 3%	56,307.
Dividend No. 83. Payable Jan. 2, 1915 3% and bonus of 3%	112,614.
	281,535.00
Taxes	16,722.36
Mileage payments	15,751.16
Interest on bonds and loans	39,109.18
Contingent account	55,000.00
Balance at credit of profit and loss, 31st December, 1914	190,273.38
	\$598,391.08

Balance at credit of profit and loss, 31st December, 1913	\$167,158.67
Net earnings, year ending 31st Dec., 1914	431,232.41
	\$598,391.08

Certified correct,  
H. T. BURPEE, JAMES D. FRASER,  
Auditor. Secretary-Treasurer.  
Ottawa, February 1st, 1915.

### OTTAWA TRACTION COMPANY, LIMITED.

#### STATEMENT OF ASSETS AND LIABILITIES, 31st DECEMBER, 1914.

Assets.	
17,118 shares of The Ottawa Electric Railway Company. Par value \$100 each	\$5,135,400.00
Liabilities.	
Capital stock	\$5,135,400.00

#### RECEIPTS AND PAYMENTS FOR 9 MONTHS ENDING 31st DECEMBER, 1914.

Receipts.	
Dividends received from The Ottawa Electric Railway Company	\$204,813.00

Payments.	
Dividend No. 1 July 1, 1914. 1%	\$ 50,853.00
Dividend No. 2 Oct. 1, 1914. 1%	51,252.00
Dividend No. 3 payable Jan. 2, 1915 1% and bonus 1%	102,708.00
	\$204,813.00

Certified correct,  
H. T. BURPEE, JAMES D. FRASER,  
Auditor. Secretary-Treasurer.  
Ottawa, February 1st, 1915.

### OTTAWA TRACTION COMPANY, LIMITED.

Directors.	
T. AHEARN	President.
WARREN Y. SOPER	Vice-President.
T. F. AHEARN	REDMOND QUAIN
ELBERT N. SOPER	J. F. SMELLIE
THOMAS WORKMAN	TRAVERS LEWIS, K.C.
	JAMES D. FRASER

### THE OTTAWA ELECTRIC RAILWAY COMPANY

Directors	
T. AHEARN	President.
WARREN Y. SOPER	Vice-President.
T. F. AHEARN	THOMAS WORKMAN
ELBERT N. SOPER	REDMOND QUAIN
	JAMES D. FRASER
JAMES D. FRASER	Secretary-Treasurer.

Coal and ash handling conveyors, belt conveyors, marine and foundry work, coal mine bankheads and screening plants, mine fans, etc.

Engineers and Contractors  
**THE EASTERN STEEL CO., LIMITED**  
Formerly the Brown Machine Co., Ltd.  
and Bailey-Underwood Co., Ltd.

New Glasgow : : Nova Scotia

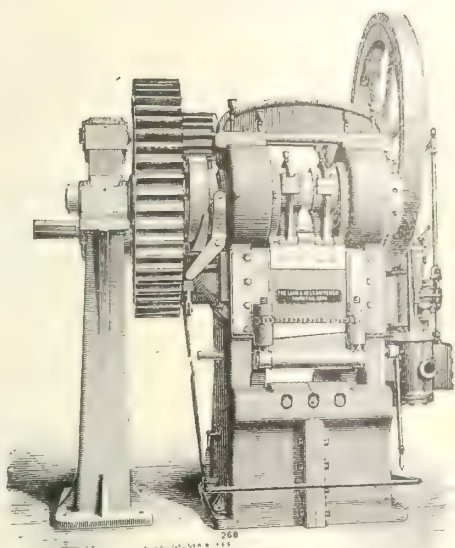
## CANADIAN BRONZE LIMITED

Brass Wearing Parts for Locomotives. Journal Bearings for Freight and Passenger Service. BABBITTS. Miscellaneous Brass Castings for Railroads.

Works and Office : 69 DELORIMIER AVENUE, MONTREAL, QUE.



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Gate Shear—Steam-Driven

Over 350 sizes and styles for all kinds of light and heavy work designed and manufactured by

## THE LONG & ALLSTATTER CO.

Hamilton, Ohio, U. S. A.

Riveting Machines

Tire Welding Machines

Armature Disc Notching Machines

Tire Bending Rolls

Beam Coping Machines

Bending and Forming Machines

Write for Catalogue if interested. Correspondence invited.



# MARTIN-SENOUR PAINTS AND VARNISHES

MADE IN CANADA

Marine Paint  
Deck Paint  
Hull Paint  
Copper Paint  
Seam Paint  
Mast Paint  
Dory Paint  
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Smoke Stack Paint  
Bunker Paint

The Martin-Senour line of Marine Paints and Varnishes is the most complete line manufactured in Canada.

There is a Martin-Senour finish for every purpose from stem to gudgeon. Each product guaranteed to best serve the purpose for which it is made.



Yacht Enamel  
Engine Enamel  
Canoe Enamel  
Deck Furniture Enamel  
Canvas Preservative  
Railing Black  
Ships Black  
Durable Boat Spar Varnish  
Boat Spar  
Cabin Finish

Write for our Marine Catalogue and Color Chart

IT'S FULL OF INTEREST TO THE MARINE TRADE



## The MARTIN-SENOUR Co.

LIMITED

PRODUCERS OF PAINTS AND VARNISHES

CHICAGO

MONTREAL

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HALIFAX

LINCOLN

TORONTO





## Patent Solicitors

**Montreal Office :** Eastern Townships Bank Building

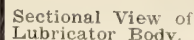
2 Toronto Street, Toronto.

**Our Experience Covers Thirty Five Plants  
Chicago, Illinois**

**BRANCH OFFICES**—Traders Bank Building, Toronto, Ont.  
Standard Bank Building, Vancouver, B.C.  
Norfolk House, Laurence Pountney Hill, London, E.C.  
808 McArthur Bldg., Winnipeg, Man.

624 Transportation Building, Montreal

Montreal, 8th February, 1915.



The Detroit Flange Lubricator means an increase in tire mileage and a decrease in tire maintenance on locomotive, tender and car wheels. Backed by the experience, skill and correct manufacturing facilities, the Detroit Automatic Flange Lubricator is an important step forward in modern railroading. For the inside facts, figures and photographs write for Catalog FO-81.

Makers of Steam and Electric Travelling Cranes, Overhead Electric Cranes, Single and Double Chain Grabs, Steam Crane Navvies, Petrol and Oil Motor-driven Cranes, Shunting and Breakdown Cranes, a specialty. Telegrams: "Coles, Derby."

### Manufacturers of Stewart Carburetors



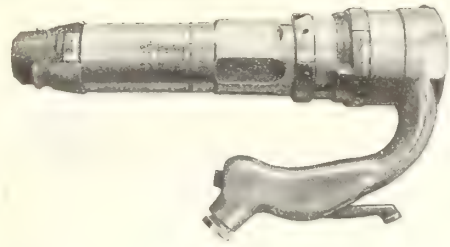
## New Boyer Rivetting Hammers

Are made suitable for all classes of work. Are furnished with:

Closed or open handle. Inside or outside trigger.

Inverted handle, permitting operation in close quarter (see cut).

M.S. tool holder—prevents piston or rivet set from shooting out, also can be used to hold a chisel (see cut).



Thousands in use in every part of Canada.

All giving excellent satisfaction.

Catalogues showing latest appliances gladly furnished on request.

SOLE AGENTS FOR CANADA:

### THE HOLDEN COMPANY, LIMITED

350-356 St. James Street, Montreal

342 Adelaide Street West, Toronto, Ont.

150 Princess Street, Winnipeg, Man.

429 Pender Street West, Vancouver, B.C.



MADE IN CANADA.

## Marconi Wireless Telegraph Apparatus

Ship sets suitable for liners, yachts, tugs, freighters and scows our specialty.

Have you considered the advantage of connecting up factory or mine to head office by wireless? We will sell or rent you a system to cover all your requirements.

Of the world's wireless stations 75% are MARCONI.  
CONSULT: "MARCONI" THE WORLD-WIDE WIRELESS

### Canadian Marconi Company

Head Office, 137 McGill St., MONTREAL



## Money paid for these Brake Shoes was largely money wasted

Why?

Because these unreinforced brake shoes did not give equivalent service for their cost, having broken in service before their life had barely commenced.

And the remedy?

Use only Steel Back Brake Shoes—then you will get your brake shoe money's worth in long and safe service.

Manufactured in Canada.

### AMERICAN BRAKE SHOE & FOUNDRY CO.

The HOLDEN CO., Ltd., Agents, 354 St. James St., Montreal.





Double Elliptic Street Car Springs with Cast Ends

# RAILWAY SPRINGS

LOCOMOTIVE, TENDER AND PASSENGER CAR SPRINGS of every description.  
EQUALIZING, DRAWBAR, BUFFER AND SPIRAL SPRINGS of all kinds.

STREET RAILWAY SPRINGS, from the largest to the smallest.

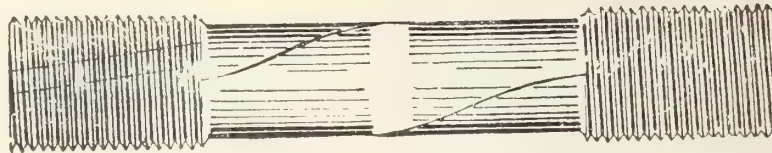
TRACK TOOLS, RAIL BRACES, TIE PLATES, GUY ANCHORS AND RODS, LOCOMOTIVE SANDERS CHAIN, Etc.

MANUFACTURED BY

**B. J. COGHLIN COMPANY, LIMITED**  
MONTREAL - - CANADA

## American Flexible Staybolts

Manufactured in Montreal



Made of the best standard staybolt iron, adding flexibility by process of making as shown above--closely approximating a rope structure.

*Write for booklet on subject.*

**TAYLOR & ARNOLD, Limited**  
MONTREAL WINNIPEG

*Rails, Cars,  
Locomotives*

*and Contractors' Equipment*

IMMEDIATE  
SHIPMENT

**John J. Gartshore**  
58 FRONT ST. WEST  
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### GRIFFIN & BRINKERHOFF

P.O. Box 97, Windsor, Ont.

Canadian manufacturers of the Celebrated Wheel Truing Brake Shoe.  
Best Wheel Grinders in the World.

### Car Closets

FLUSH OR DRY

DUNER CO. 101 S. CLINTON ST.  
CHICAGO

### FOR TICKET CASES AND COMMERCIAL FURNITURE

of all descriptions to stock  
or special design, apply to  
The Canadian Office and School Furniture  
Co., Limited  
Preston : Ontario

### MILLER Boiler Washing System

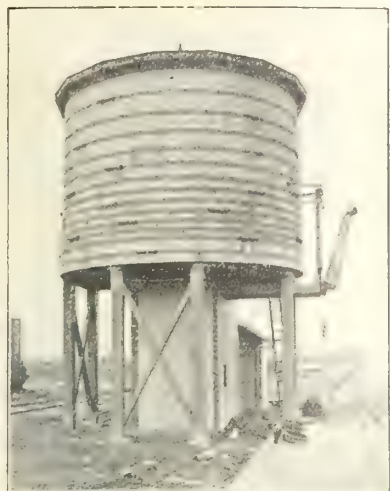
Utilizes Blown-off Products from Locomotive Boilers to Heat Water for : :

*Washing Boilers at 120°  
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HIGHEST IN EFFICIENCY  
MODERATE IN COST  
LOWEST IN MAINTENANCE

**F. W. MILLER HEATING CO.**  
McCORMICK BLDG., CHICAGO





## Our Tanks

have stood the test with all of the principal railroads in Canada. Our reputation is backed by 30 years' experience in manufacturing railroad water supplies.

Steel and Wood Tanks, Towers, Fixtures, Railroad Pumps, Mansfield Water Columns, Gasoline Engines, Cyclone Hoists, Hydraulic Rams.

## Ontario Wind Engine & Pump Co., Ltd.

Write Office Nearest You.

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## Which Method

prevails in your plant? Does it take two men to do one man's work.

Why don't you replace that old antiquated tool with a new up to date

## Reece's New Screw Plate

These pictures do not exaggerate conditions as you can actually see them, if you will visit Machine Shops throughout the country.

Lessen your cost by giving your mechanics a REECE'S NEW SCREW PLATE.

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## The Great Spare Time University

This university does not reserve its advantages for the wealthy or well-to-do—its privileges are within the reach of all. It does not ask a man to give up his job and leave home—it comes to him wherever he may live.

This university has students among all classes of men in every civilized country on the globe. It can truly be called "The World's Greatest University"—it enrolls a hundred thousand students every year—more than all the technical schools combined.

Two hundred and seventy-two courses are taught by this university—thirty of them are designed especially for men employed on the railroads and in ocean and lake navigation.

More than two hundred of the railroads in America have made co-operative agreements with this institution for the training of their employees.

This great Spare-Time University is the International Correspondence Schools with headquarters in Scranton, Pennsylvania, and London, Eng.

Full particulars will gladly be furnished upon request—either about individual courses for ambitious men who want to qualify for promotion or about the co-operative agreements for railroad officials who want to increase the efficiency of their employees.

Use the attached coupon for convenience in inquiring.

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Please explain, without obligation to me, how I can qualify for the position before which I mark X.

Locomotive Engineer	Marine Engineer
Air-Brake Inspector	Ocean Navigation
Air-Brake Repairman	Lake Navigation
General Foreman	Coastwise Navigation
R. R. Shop Foreman	Civil Engineer
R. R. Traveling Engineer	Commercial Construction
R. R. Traveling Fireman	Electrical Engineer
R. R. Construction Eng.	Tel. and Tel. Engineer
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Name .....

St. and No. ....

City..... State.

Present Occupation .....

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Do you wish particulars about co-operative plan for railroads? .....



# SAFETY FIRST

The best way to educate your employes to the safety habit is by signs.

The "SAFETY FIRST" sign will be before them many times each day and warn them of the constant danger they are subject to in the course of their duties.

Enamelled iron signs, on account of the brilliancy of their colors, attract immediate attention. They never fade and are as good in ten years' time as the day they are put up.

We make to order in any colors, with any lettering or design.

We will be pleased to quote you prices and submit sketches on request.

*Acton Burrows*  
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Head Office and Works,  
MONTREAL, P.Q.

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TORONTO, OTTAWA AND WINNIPEG.



Lachine Bridge.

Engineers, Manufacturers and Erectors of Steel Structures.

CAPACITY 135,000 TONS.

Railway and Highway Bridges, Swing and Bascule Spans, Buildings of all kinds. Hemispherical Bottom and other Tanks, Transmission Poles and Towers, Riveted Pipe, Caissons, Barges, Turntables, Electric and Hand Power Cranes, Hoisting Appliances, Lift Locks, Hydraulic Regulating Gates, etc. Gear Cutting and General Machine Work.

LARGE STOCK OF STANDARD STRUCTURAL MATERIAL AT ALL WORKS.

## "BEATTY"

USED  
FROM  
COAST  
TO  
COAST

HOISTING ENGINES  
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Tell us what you need in the way of Excavating or Material Handling equipment.

Our experience and facilities will enable us to interest you.

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AGENTS: H. E. Plant, 1790 St. James St., Montreal; E. Leonard & Sons, St. John, N.B.; Robt Hamilton & Co., Vancouver, B.C.; A. R. Williams Machinery Co., Winnipeg, Man.



# Continued Success for 1914

The Thirty-fourth year of the North American Life's history is marked by continued success.

The more important phases of the business made splendid and encouraging increases.

The Assets were increased to \$14,916,007.88.

Net Surplus exceeds \$2,000,000.

Policies in Force now amount to over \$54,000,000.

Every feature points to the solid and successful state of the

## North American Life Assurance Co.

### Outstanding Figures For 1914.

Policies in Force .....	\$54,326,926
Policies Issued .....	7,854,050
Policies Applied For .....	8,354,266
Assets .....	14,916,008
Net Surplus .....	2,116,166
Cash Income .....	2,664,117
Profits Paid to Policyholders .....	227,636
Total Payments to Policyholders .....	1,340,089

Profits Contingently Allotted to Policyholders for 1915, \$236,202.95.

### Profits Paid To Policyholders

in the past ten years aggregate \$1,430,383.96. Of this amount the sum of \$227,636 was paid to policyholders in 1914.

A steadily increasing earning power on investments, a favorable death rate and a management that skillfully combines progress with conservatism are your guarantee that North American Life Policies will pay.

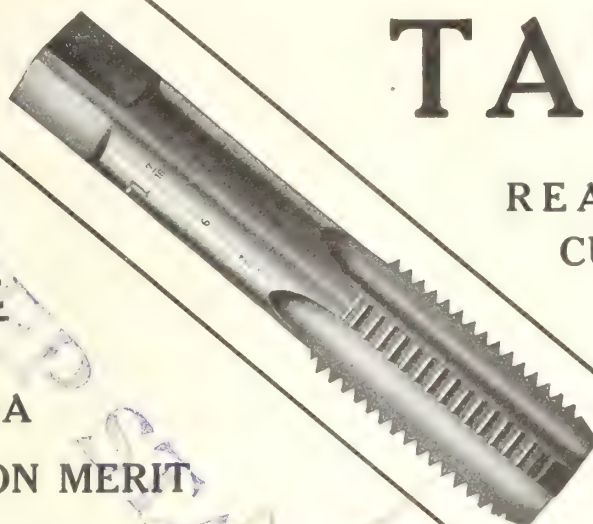
## North American Life Assurance Co.

"Solid as the Continent."

L. GOLDMAN,  
First Vice Pres. and  
Managing Director

EDWARD GURNEY,  
President

MADE  
IN  
CANADA  
SOLD ON MERIT



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REAMERS  
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Ask for our new catalogue No. 8

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# HUNT-SPILLER IRON

HAS THE

STRENGTH AND WEARING QUALITIES

that are absolutely necessary in

## LOCOMOTIVES CASINGS

ELIMINATES ENGINE HOUSE REPAIRS

Made Only by

## Hunt-Spiller Mfg. Corporation

W. B. LEACH, President and General Manager.

Office and Works,  
383 Dorchester Avenue,  
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J. G. Platt,  
Sales Manager.

Canadian Representative,

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392 St. James St., Montreal, P.Q.





our geared jacks.

## Celebrated "H & E" Lifting Jack

Our Patent Ball-Bearing Geared Jacks are Ideal in Railroad and heavy Construction Work.

These Jacks are built for heavy service in bridge, roundhouse and wrecking work, are made with great care from the very best material and will be found the most satisfactory jacks for the purpose on the market.

## Canadian Brakeshoe Company, Limited

SHERBROOKE, QUE.

Sole Agents for Brakeshoes for Canada outside of B.C., Messrs. Taylor & Arnold, Limited, Montreal and Winnipeg. Sole Agents for B.C., The B.C. Equipment Co., Vancouver, B.C. Sole Agent for Lifting Jacks for Canada, F. H. Hopkins & Co., Montreal.

## High Grade Electric STEEL CASTINGS MANGANESE STEEL

For Crusher Jaws and Heavy Wear Parts

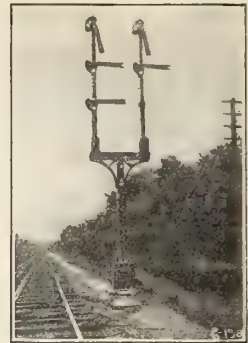
## BRONZE

M.C.B. Standard Journal Bearings and Engine Bearings

Improved Reinforced Steel-Backed

## BRAKESHOES

Locomotive Driver and Truck Shoes. Freight and Passenger Car and Electric Car Shoes.



## STANDARD Signal Wire

will give dependability to your electric circuits and reduce maintenance cost.

Recommended by years of successful service on some of the largest signal systems on the continent.

Write our nearest office for further information.

## Standard Underground Cable Co. of Canada, Limited

Hamilton, Ont.

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JAMES THOMSON,  
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J. G. ALLAN,  
Vice-President.

JAMES A. THOMSON,  
Secretary.

## THE GARTSHORE-THOMSON PIPE & FOUNDRY CO.

MANUFACTURERS OF

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3 inches to 60 inches diameter

FLEXIBLE AND FLANGE PIPE AND SPECIAL CASTINGS

FOR WATER, GAS, CULVERT AND SEWER  
HAMILTON, ONT.

## CANADA WIRE AND CABLE COMPANY

LIMITED

BARE AND INSULATED ELECTRICAL WIRES AND CABLES

Prompt Shipment from factory or nearest warehouse.

Head Office and Works, TORONTO

Sales Offices and Warehouses: 401 Lake of the Woods Bldg., Montreal; 150 Princess St., Winnipeg; Macdonald, Marpole Co., 427 Seymour St., Vancouver; Canada West Electric, Ltd., Regina and Edmonton; Northwestern Engineering and Construction Co., Ltd., Calgary.

## NICKEL SHOT—HIGH AND LOW CARBON INGOTS—TWO SIZES, 25-LB., 50-LB.

Electrolytic Nickel—99-80%

Prime Metals for the manufacture of Nickel Steel, German Silver, Anodes, and all remelting purposes. Our Nickel is produced as rods, sheets, strip stock and wire.

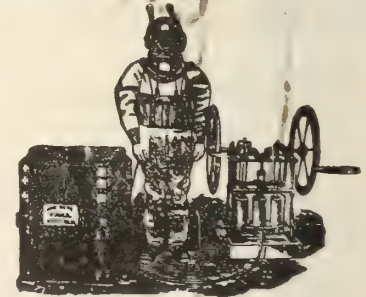
**MONEL METAL** We are Sole Refiners of this natural stronger than steel, non-corrosible alloy. Produced as rods, flats, castings, sheets, strip stock and wire. Ask for descriptive booklet.

Send inquiries direct to us.

THE INTERNATIONAL NICKEL COMPANY, - 43 Exchange Place, New York

## MORTON MANUFACTURING CO.

Draw Cut Pillar Shapers. Special Draw Cut Locomotive Axle Box Shapers. Locomotive Cylinder Planers. Portable Slotters, Steel Foundry Shapers, Frog and Crossing Shapers, Stationary and Portable Keyway, Cutters, Finished Machine Keys. Office and Works, MUSKEGON HEIGHTS, MICH., U. S. A.



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Manufacturer of

## Diving Apparatus

For Sale or Hire

Brass Founder and Coppersmith

13-15 Concord St., Montreal

## The Ottawa Car Manufacturing Co., Limited

Builders of

ELECTRIC CARS, FINE  
CARRIAGES, WAGONS,  
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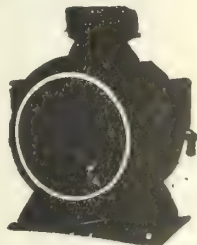
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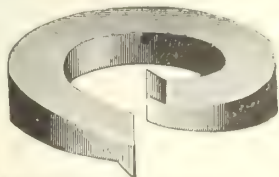
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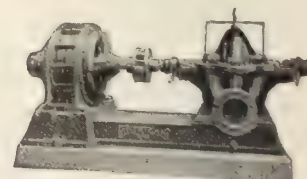
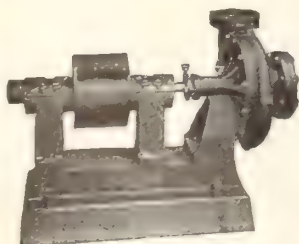
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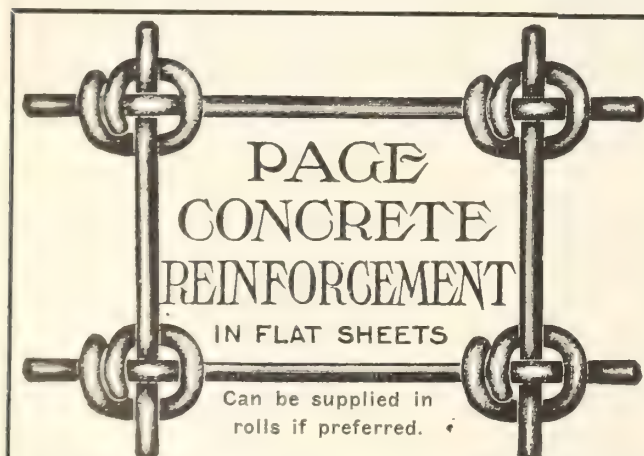


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The standard mesh for road pavement is 6 x 12 inches; for bridges and building floors, the standard is 3 x 6 inches. Also, other meshes as desired. All sheets 4 feet wide, and any length specified that can be loaded in cars.

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When you are depending upon a locomotive crane for handling your coal you realize that it must be a **good** crane. You cannot have the crane continually breaking down, as it means a big loss in time.

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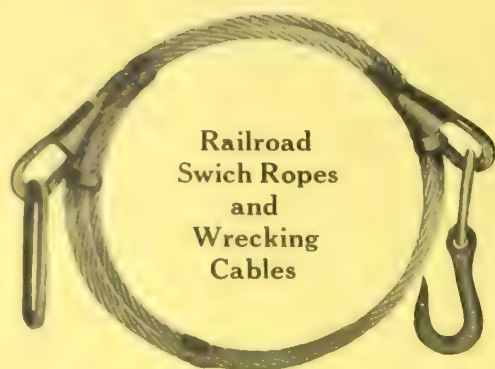
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Write for our Catalog K, which shows how and where the Brownhoist Locomotive Crane is used.

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***CLEVELAND, OHIO***

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Railroad  
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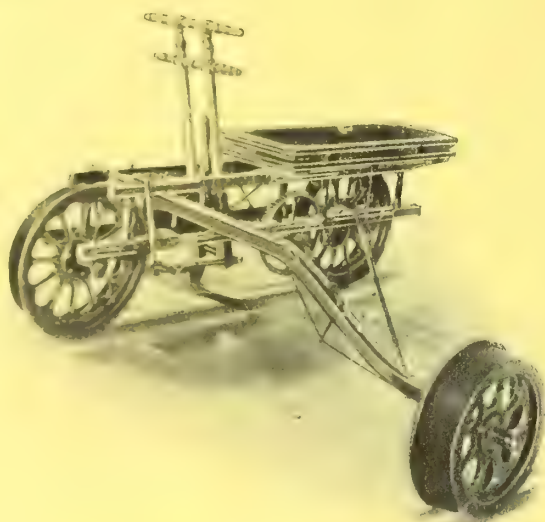
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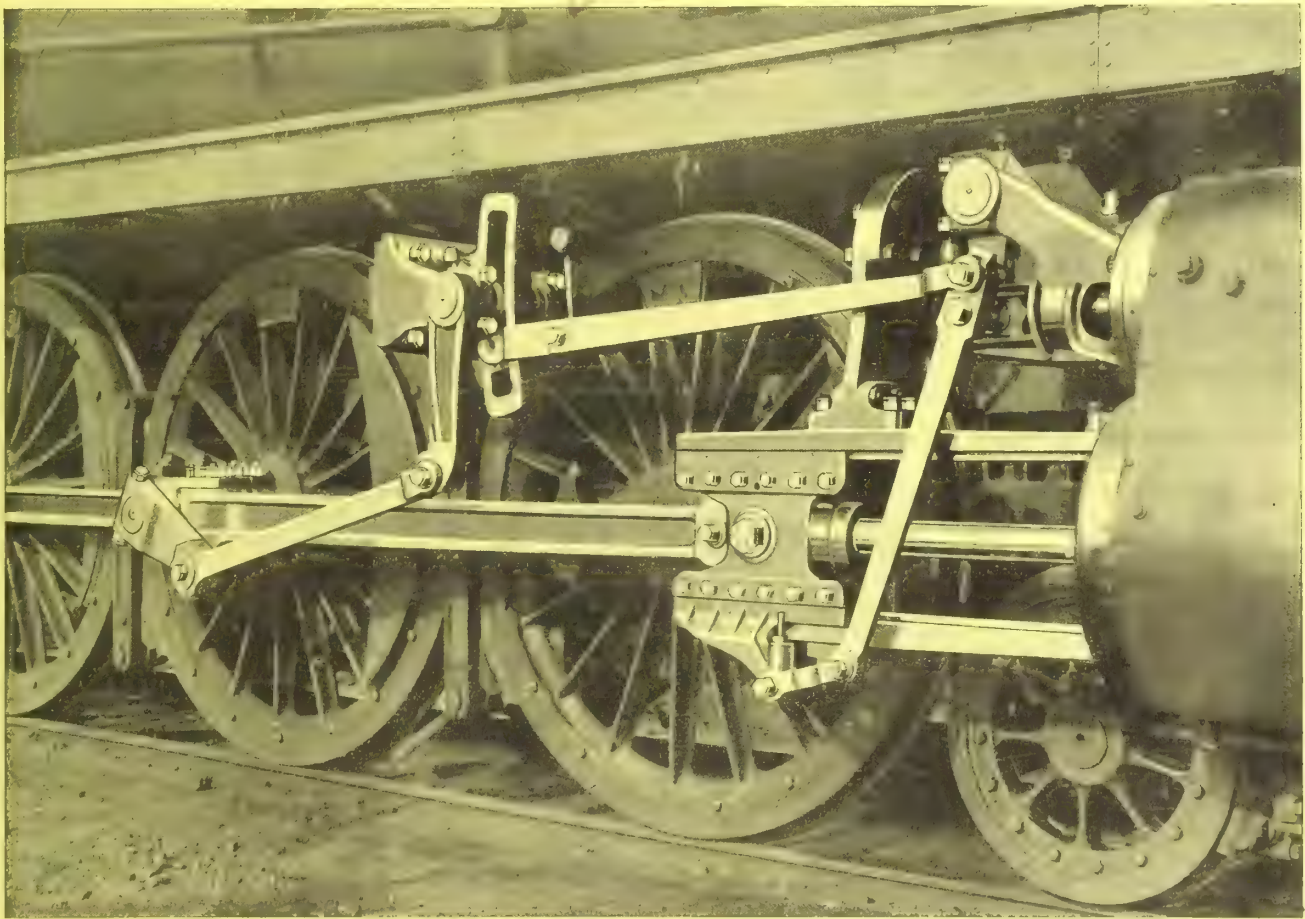
# Canadian Railway AND Marine World

ESTABLISHED 1898.

Number 206

TORONTO, CANADA, APRIL, 1915

Subscription Rates, Page 139



*Made safe with GRIP NUTS.*

The best specifications for modern equipment read

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The frequent starts and stops in city service necessitate a brake equipment instantly responsive to application and release and sufficiently rugged to withstand hard continuous usage.



## The Westinghouse SME Straight-Air Brake With Emergency Feature

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THE MOST PRACTICAL CAR FOR ALL BULK FREIGHT.  
A DUMPING GONDOLA FOR ALL SERVICES.

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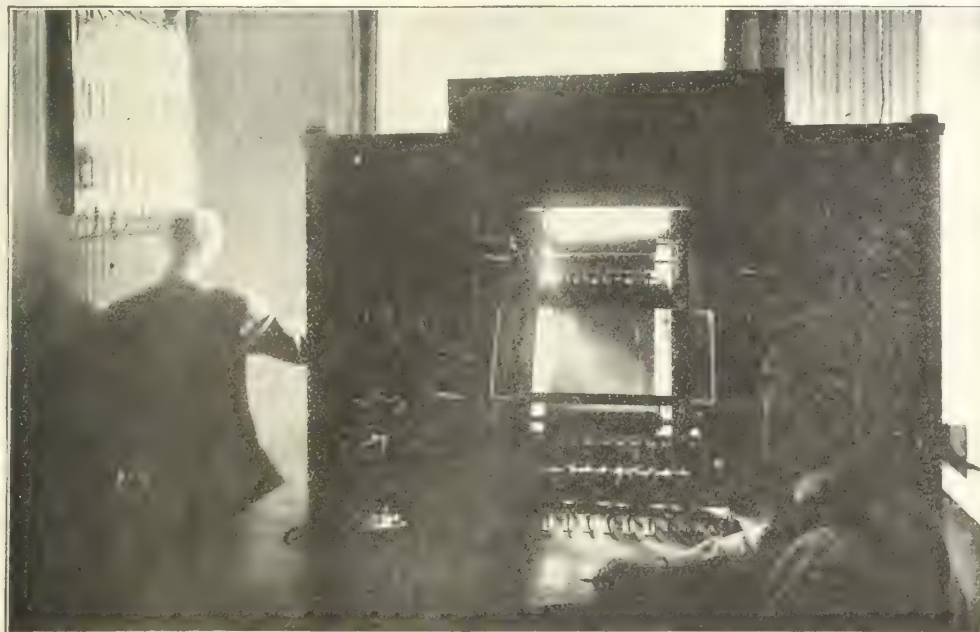


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There is little doubt that there would be a tremendously greater amount of mileage protected by automatic block if first cost were the only difficulty to be encountered. The great difficulty, however, in the universal use of fixed automatic block signals is found in the continuous cost of maintenance.

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When forgings are required to stand the strain of rough weather, and to prove themselves reliable and dependable, write us for particulars and prices.

We have the facilities for the production of heavy steel forgings of all kinds, including:

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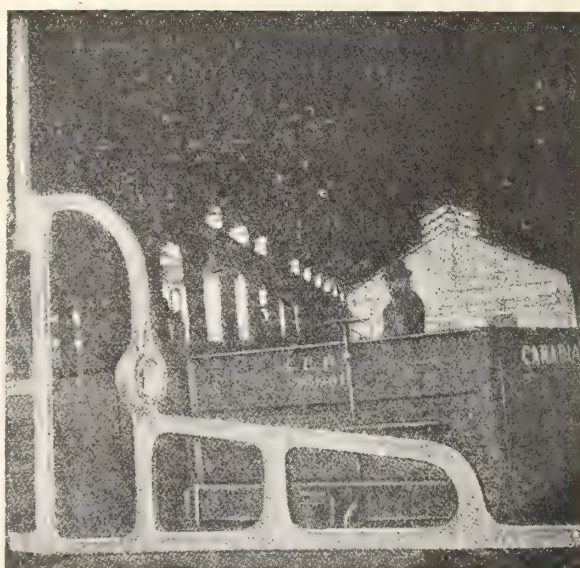
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Not only will Automatic Block Signals safeguard your traffic throughout the seasons of the year, through the heavy fog of spring and summer, through the storm and blizzard of winter, but they will move your traffic faster and decrease the spacing distance between your trains, thereby increasing the capacity of your double and single track lines.

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247 miles on the Great Northern, 1,092 miles on the Northern Pacific, in the cold sections of North America, prove that this is the system for cold climate.

An installation will pay dividends on the investment. Write for information.



*"Safety First"*



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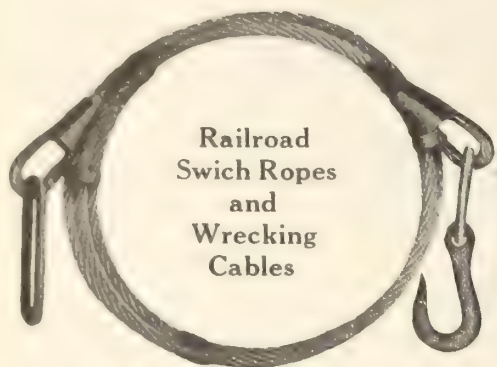
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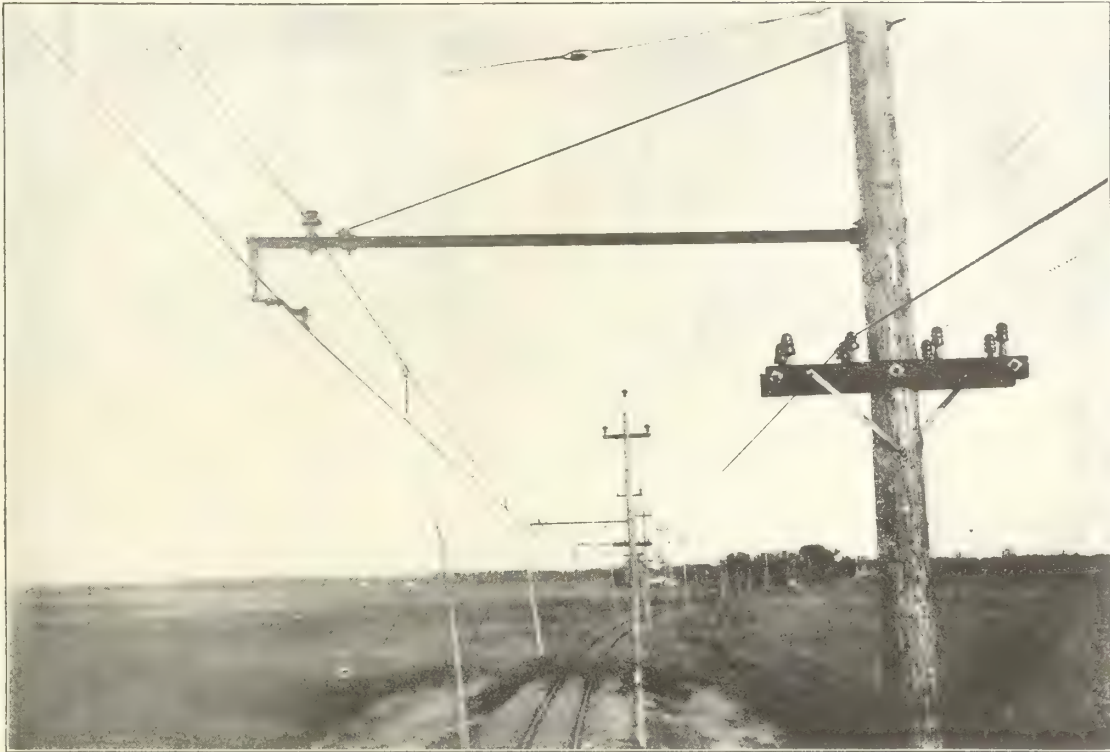
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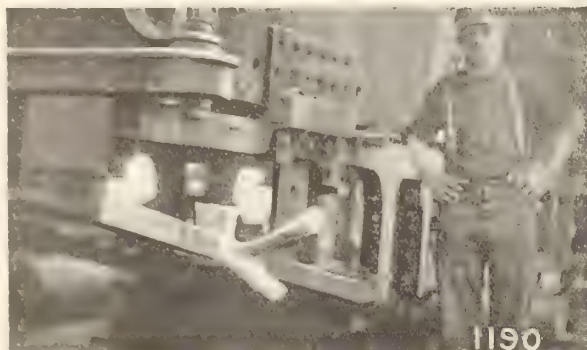
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Frame Welded with Thermit by the Illinois Central,  
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You can weld a frame quickly and economically with Thermit, whether it is broken in the splice, under the fire box, close up to the cylinder, or at any other point. It is not necessary to take the frame down, as all welds can be made with the frame in place.

No other process of welding is so quick and uniformly efficient and economical in operation as the Thermit Process.

The proof is in the fact that to-day 435 railroad shops in North America are using Thermit and returning their engines to service in from 10 to 24 hours.

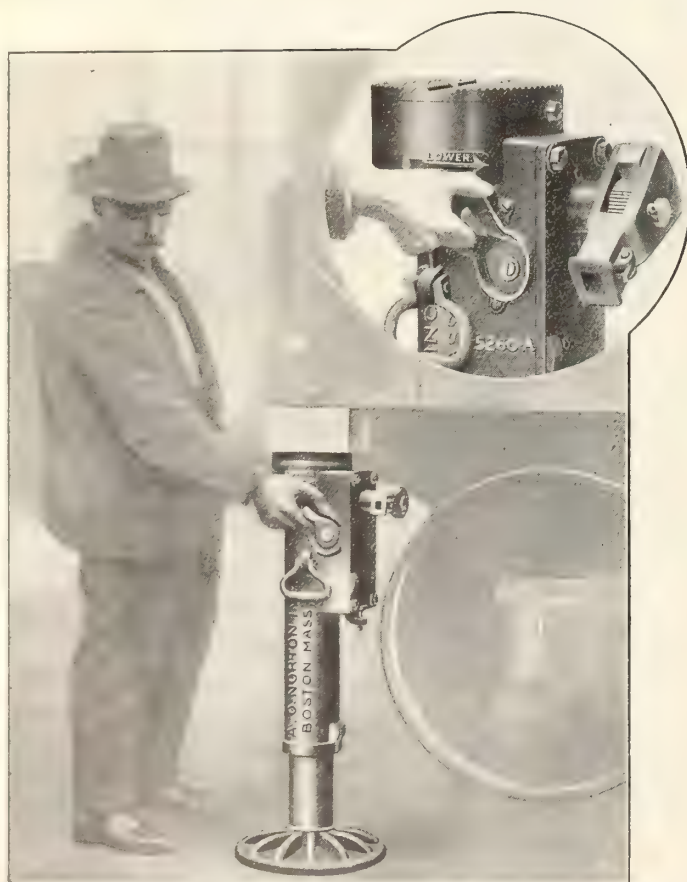
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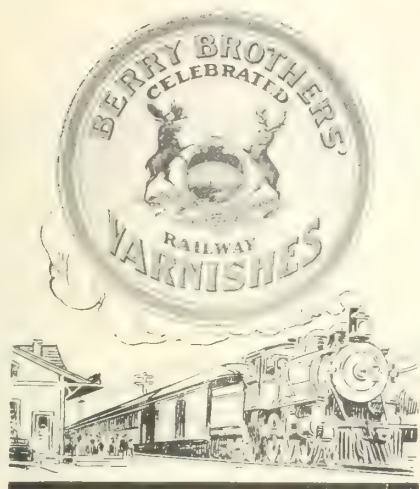
is absolutely Safe and will do your  
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Expensive things without freshness of appearance look less valuable than cheaper articles with continued freshness and the small investment in Berry Brothers' Varnishes returns many times its cost in what it does for other things.

Berry Brothers' extensive line of railway varnishes makes it possible for you to purchase the right varnish for every demand. Each varnish is made to give long lived service and wear under the most exacting conditions.

### A FEW RAILWAY VARNISHES YOU SHOULD KNOW

Outside Coach Finishing  
Inside Coach Finishing  
Locomotive Finishing

Hand Rail Black  
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Outside Coach Rubbing  
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**BERRY BROTHERS**  
(INCORPORATED)  
**World's Largest Varnish Makers**

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TATE FLEXIBLE STAYBOLT**

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FIRST—That flexible staybolts produce more satisfactory and more economical results than rigid staybolts.

SECOND—That TATE FLEXIBLE STAYBOLTS are best of all, measured by every standard.

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Passenger Traffic Manager,  
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## Excellence in Railway Service

is expressed in what the

### Grand Trunk System The Double Track Route

is offering the Travelling Public of Canada.

**Unexcelled Road Bed  
Superior Dining Car Service  
Courteous Attention  
Modern Equipment**

The Grand Trunk System reaches all trade centres in Eastern Canada, and is now a large factor in Western Canada traffic through the Grand Trunk Pacific Railway, recently completed to the Pacific coast.

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The Dearborn Company was organized because of the conviction on part of its founders that a scientific handling of the water treatment question was the only solution for the steam user of the troubles constantly arising as a result of scale formation, foaming, corrosion and pitting of boiler tubes, with all the attendant injury to the boilers, loss of heating efficiency, and waste of fuel.

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The application of scientific knowledge is most important in the choosing of reagents. Provision must be made for the various minerals present in the water, determined by analysis, as well as for the by-products that will be formed as a result of reactions brought about. Failure to give this phase due consideration may result in more serious trouble than the first condition of the water produced.

Unscientific "dope" compounds, ineffective and often harmful, have caused steam users endless annoyance and trouble.

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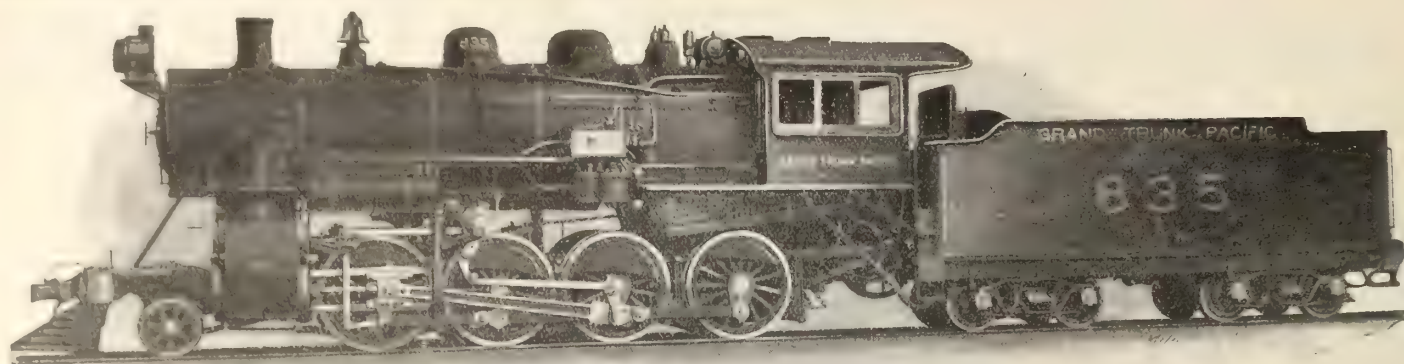
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Passenger, Freight  
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Consolidated Type Locomotive Built for Freight Service on the Grand Trunk Pacific Railway.

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Long experience, new equipment, efficient management and expert workmen, are guarantees that our Locomotives will give record service. Over 1,200 Locomotives have been built at our Works since the erection of the plant. We are builders of Simple and Compound Locomotives adapted to every variety of service, for Railway Contractors, for Industrial Purposes, Mines, all classes of Railway Work, etc.

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## Nova Scotia Steel and Coal Co., Limited

*Manufacturers of*

MARINE, RAILWAY AND GENERAL ENGINEERING FORGINGS OF ALL SHAPES AND UP TO 40 TONS IN WEIGHT, MADE FROM BEST ORDINARY OR HARMET FLUID COMPRESSED OPEN-HEARTH STEEL. OUR FORGE IS EQUIPPED WITH THE MOST MODERN STEAM HYDRAULIC PRESSES.

*RAILWAY TRACK MATERIAL, fish plate, tie plate, track bolts, spikes, tee rails—12 to 40 lbs. per yard.*

ROLLED STEEL FOR CAR BUILDERS' USE: Spring, machinery, tire, angle, and merchant bar steel, bright compressed shafting, rivets, tank plate—12-gauge up to 1" and 50" wide cold twisted steel bars for reinforced concrete work.

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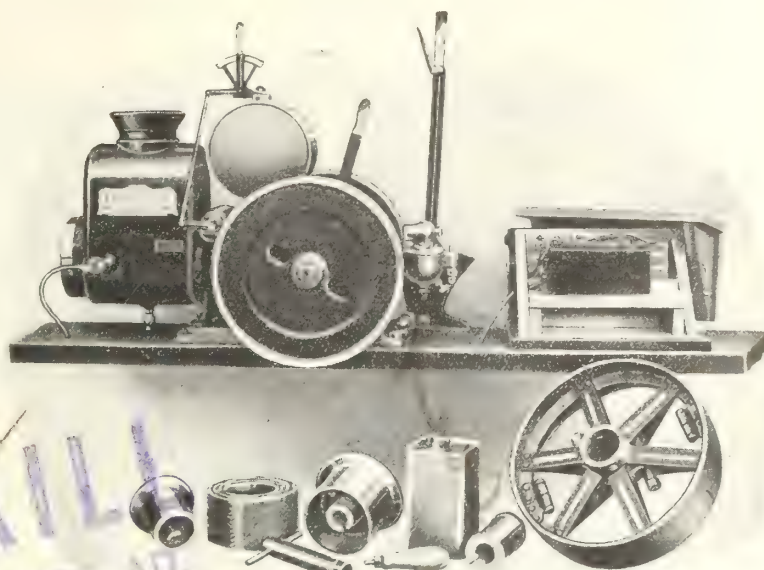
This new 4 H.P. engine uses less gasoline than our previous 3 H.P. "Hit and Miss" which used a third less than any other engine made.

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have a Ball-Valve which admits tiny charges at the points of Spark Plug where they are unfailingly exploded. It saves gasoline, prevents missing, and keeps spark plug clean.

Throttles down to three miles per hour, without missing, on less than half the fuel consumed by any other throttled engine.



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**ONE NIGHT FOR THE ROUND TRIP  
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Convenient Service to Port Hope, Cobourg, Colborne, Brighton, Trenton, Belleville, Napanee and Smith's Falls.

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	P.M.		A.M.
Leave TORONTO	11.00	Arrive OTTAWA	7.40
	P.M.		A.M.
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	(Daily)		

### DAY TRAIN

	A.M.		P.M.
Leave TORONTO	10.20	Arrive OTTAWA	7.05
	NOON		P.M.
Leave OTTAWA	12 15	Arrive TORONTO	9.15
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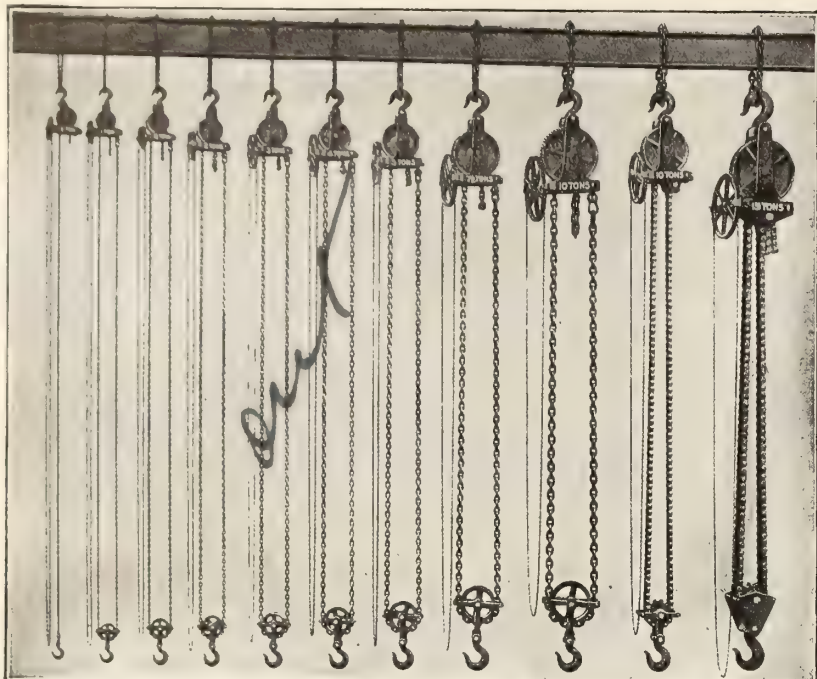


Day trains leave at hours particularly attractive to ladies, also to business men who can attend to their morning mail before leaving Toronto.





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### Permanent Construction On Railway Right-Of-Way



Pedlar's "Perfect" Rivetted Culvert at Highway Crossing intersecting  
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is assured by the installation of Pedlar's  
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Supplied in any length up to 40 feet,  
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Write for complete Culvert Re-  
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Address branch nearest you.

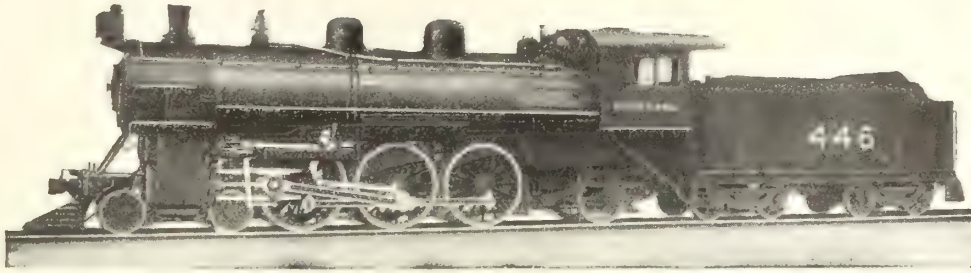
#### The PEDLAR PEOPLE, Limited

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## Heavier Trains—Less Coal and Water Per Trip



PACIFIC TYPE LOCOMOTIVE — INTERCOLONIAL RAILWAY.

Total weight of engine, 243,500 pounds; weight on drivers, 154,000 pounds; diameter of drivers, 73 inches; boiler pressure, 180 pounds; cylinders,  $23\frac{1}{2} \times 28$  inches; maximum tractive power, 32,400 pounds.

On a 185 mile run at an average speed of 40 miles per hour, these new Pacific type locomotives handle 10 cars and consume 12,884 pounds of coal and 9,750 gallons of water per trip.

Pacific type locomotives built five years ago, handled 9 cars on this same run at the same speed, but consumed 17,620 pounds of coal and 14,250 gallons of water per trip.

This is a saving of 26.9 per cent. in coal and 31.6 per cent. in water, with one extra car.

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They are much superior to a painted wooden sign, which has to be repainted at frequent intervals, and they last a lifetime.

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**Acton Burrows Limited**

70 Bond Street, Toronto, Ont.



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TO THE CANADIAN STREET RAILWAY COMPANIES

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**KNUTSON Trolley Retriever**

**IDEAL Catcher**

**Pressed Steel Headlight**

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and other specialties and by February 25th, will be in a position to make shipment of our products from our Canadian Plant. Feel certain that this move will be appreciated by the Canadian Street Railway Companies and await the continuance of the valued patronage given us by the numerous lines in Canada.

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No other system of car lighting gives clean, safe and efficient light without intricate mechanism, subject to defects and failures. Pintsch Mantle Light is the only absolutely dependable method of lighting railway cars.

**The Safety Car Heating and Lighting Company**

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718 TRANSPORTATION BUILDING, MONTREAL





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Use Garlock Style Number 200.

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For 50 years we've made files only. To-day we make sixty million each year. From raw steel to finished file we supervise every step.

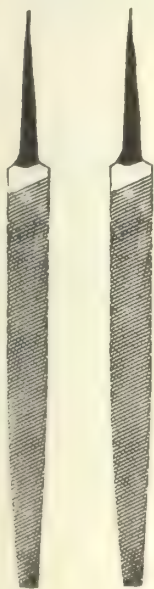
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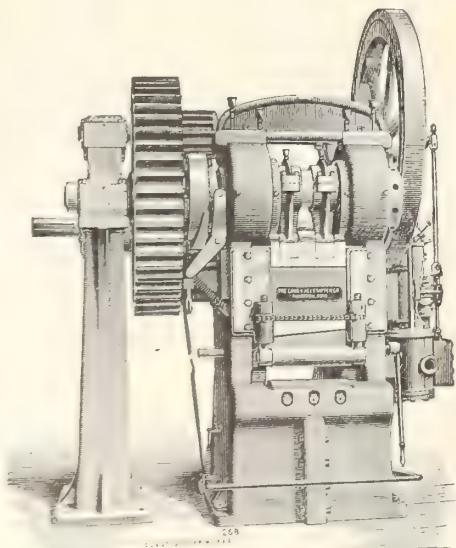
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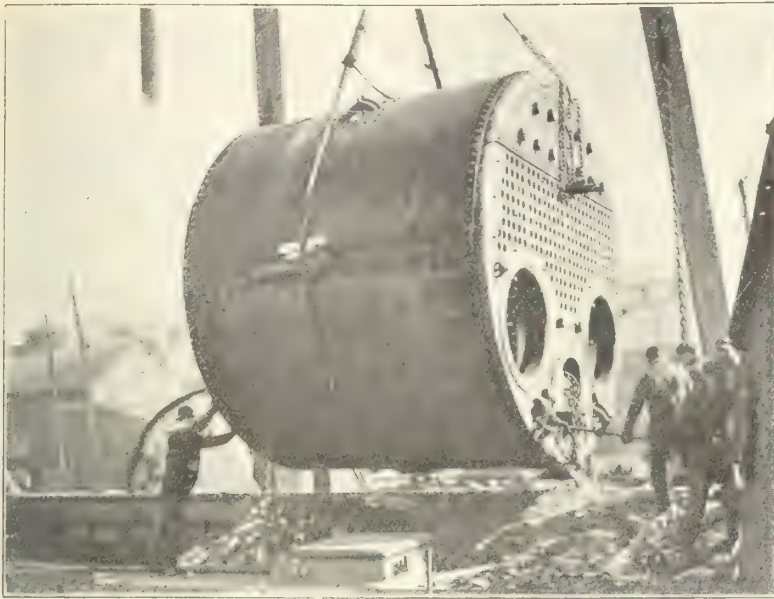
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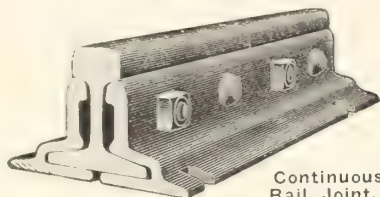
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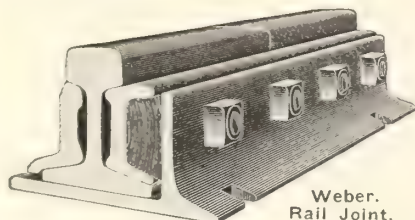
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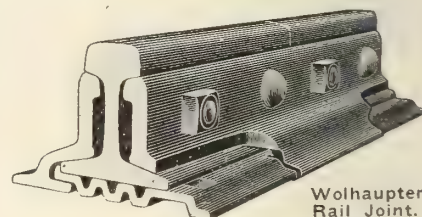
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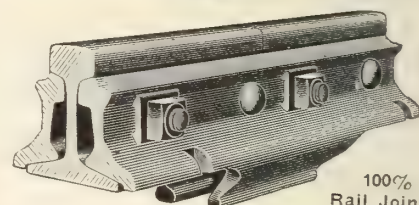
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## PRICE LIST C

Length Handle	Set No.	Pipe Handled	Set Complete	Extra Handle	Extra Girths
10 in.	1	$\frac{3}{8}$ , $\frac{1}{2}$ , $\frac{3}{4}$ , 1 in.	\$5.00	\$2.25	$\frac{3}{8}$ , $\frac{1}{2}$ , $\frac{3}{4}$ , 1 in. \$ .75
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Prices on larger sizes furnished upon application.

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POSITIVE GRIP instantly taken. Operates without lost motion in stroke of handle. Can be locked or released easily in any position on the pipe.

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Manufacturers of

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Works and Sales Department: Sault Ste. Marie, Ontario, Canada

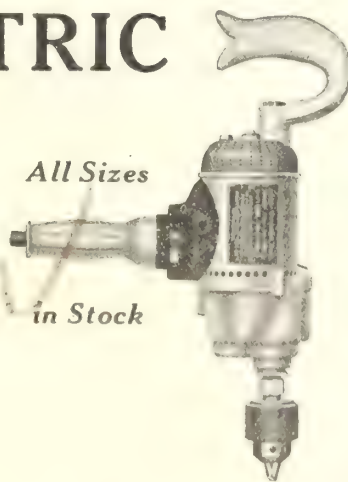
**Thor**  
SIZES

000	Drilling	up to	$\frac{1}{4}$ in.
00	"	"	$\frac{5}{16}$ "
0	"	"	$\frac{3}{8}$ "
01	"	"	$\frac{1}{2}$ "
1	"	"	$\frac{19}{32}$ "
6	Grinder	1" Wheel	

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# American Flexible Staybolts

Manufactured in Montreal



Made of the best standard staybolt iron, adding flexibility by process of making as shown above--closely approximating a rope structure.

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The G. and S.W. Rwy., Albert Harbor Goods Station, Greenock, N.B.  
"B. & W." 30 Tons Electric Travelling Goliath Crane, 70 Feet Span

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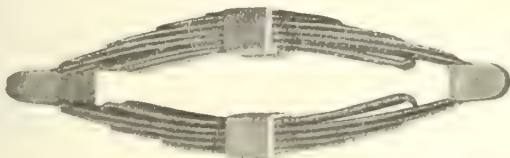
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# Canadian Railway and Marine World

April, 1915.

## Development and Effect of Railway Operating Standards.

By Geo. Bradshaw, Safety Engineer, Grand Trunk Railway and Grand Trunk Pacific Railway.

A standard is a principle promoted from the ranks on its own merits and given extensive jurisdiction with ample authority. Its first official act consists in removal from the service of all unfortunate fellow principles who contended for preference. A standard represents, in the survival of the fittest, nature's law applied to business affairs.

When we consider that the first railway spike was driven on the American continent within the memory of men still living, we are prepared to appreciate the wonderful progress made. We shall, however, get but an incomplete understanding of that progress if we consider only outward appearances and content ourselves with a comparison of the roadway, structures and equipment of today, with models of years ago. The really great achievements in railway history have been the solution of problems relating to administration and management. To the railways of Canada and the United States is conceded the proud distinction of being the most progressive in the world. While to England, we owe the wheel flange, the locomotive and the Bessemer process, we have contributed the telegraph, the airbrake, the automatic coupler, the electric signal, and the steel car. The natural explanation for the enviable record we have attained is found in the combination of two facts. First, a precedent with us has no sacred significance. Our standards of yesterday are found in the scrap heap of today. We never have been, and never intend to be, satisfied with anything we do. Secondly, we have developed the principle of cooperative action. We operate the railways of this continent—almost 300,000 miles—practically as one system. This result has been brought about by the evolution of standard methods, devices and appliances.

**The Standard Gauge.**—The first railways of England consisted of beams placed end to end, and were constructed solely for carrying coal. Neither the locomotive nor the car was known at that time, and the principle of common carrier was not introduced till long after the first railways were built. Any person owning a coal wagon and the animals to draw it was permitted to use the early railways upon payment of prescribed rates of toll. The railways were simply a new form of toll roads for public use. It was, of course, necessary to make the gauge of the first railways conform to the trackage width of wagons in common use at the time. That happened to be 4 feet 8½ inches, and to that circumstance we owe the standard gauge of this day which prevails on about three-fourths of the railways of the globe.

The Liverpool and Manchester Ry.—at first a toll road—adopted the locomotive in 1829, and other lines followed; but the uniform gauge of the toll roads was maintained till the opening of the Great Western. That line had a gauge of 7 ft.; the Great Eastern, 5 ft., and the Caledonian, 5½ ft. It was contended that the broad gauge permitted greater speed and economy of operation. This conflict of opinion was responsible for the "battle of the gauges," which had an indirect but important effect upon the ad-

vancement of railway construction. This was because it gave an impetus to locomotive development, which otherwise would have remained dormant till a much later date. In this day of speed records, it may serve as a healthy curb upon our vanity to bear in mind that in 1846, a locomotive on the Great Western attained a speed of 78 miles an hour, and in the following year one on the London and North Western (standard gauge) made 79 miles an hour. The "battle of the gauges" was ended in 1846 by an act of Parliament requiring all future constructed roads for carrying passengers in England to have a gauge of 4 ft. 8½ ins. It was not, however, till 1892 that the Great Western—the last of the broad gauge lines—completed the change to standard gauge, which it commenced in 1872 by laying a third rail.

Before railway construction was seriously undertaken on this continent, two principles had been discovered and developed in England, for which the world must ever remain in debt to the pioneers of that day. One was the wheel flange. It would perhaps be impossible, in the whole history of applied mechanics, to find another device so simple and insignificant in appearance to which the world owes so much as it does to this humble contrivance, the conception of an equally humble person. A coal miner, noting the excessive friction of the flange rail, simply transferred the flange to the wheel. When this was done, the owners of ordinary wagons could no longer use the railways, and it became necessary to devise special wagons, which were the forerunners of the freight car, known in England to this day by the name of wagons. The use of the special wagon, or car, brought an end to the existence of railways as public toll roads, and introduced the principle of common carrier. Following these fundamental developments, came the locomotive, the one instrumentality absolutely necessary to make possible the practical value of all that had preceded. We had the benefit of these developments and hence, with a few insignificant exceptions, railways never existed as toll roads in this country. The locomotive and the principle of common carrier were at once transplanted from England.

Little consideration, however, seems at first to have been given on this continent to uniformity in gauges. That this should have been so, especially after the experience of England had proved the importance of the matter, is explainable in part by the fact that the early roads were intended only for local and sectional purposes, and were authorized by special charters of the various provinces and states, instead of by one body as in England, and partly by the circumscribed ideas prevailing, even to a comparatively late date, as to the true functions of railways. We had as many as eight different gauges—3 ft.; 3 ft. 6 ins.; 4 ft. 8½ in.; 5 ft.; 5 ft. 6 in.; 5 ft. 9 in.; 5 ft. 10 in., and 6 ft. The Grand Trunk's gauge in Canada was 5½ ft., said to have been determined upon because the British Government adopted that standard for the railways of India. The Erie, for almost 50 years, main-

tained a 6 ft. gauge. The Pennsylvania, on some of its lines, had a gauge of 5¾ ft., which was retained for many years after the general adoption of the standard gauge. Most of the roads south of the Ohio River were built to a 5 ft. gauge.

It was maintained that the broad gauge permitted the movement of greater load in proportion to the dead weight of equipment. Where this lack of uniformity existed, it constituted an obstacle to through traffic. Passengers changed cars when they came to "the break in gauges," and freight was transferred at such points piece by piece, or the bodies of cars lifted from the trucks of one gauge and set upon those of another. To realize what this meant, unless one recalls from experience, he should undertake to make a trip, or to ship a package of freight over the various electric roads between distant cities.

Our "battle of the gauges" lasted for 30 years, instead of 10 as in England, and was terminated here by voluntary action of the roads instead of by legislative enactment. The Grand Trunk changed to standard gauge in 1874. On May 31 and June 1, 1886, most of the lines south of the Ohio River changed. The record made by those lines, time considered, must be regarded as one of the great feats in railway history. The change involved almost 25,000 miles of track, 1,800 locomotives and 45,000 cars. One of these roads—the Louisville and Nashville—on May 30, 1886, changed over 1,800 miles.

With the adoption of the standard gauge the history of systematic railway operation on this continent really begins. In the same year of its consummation, the two distinct bodies of operating officers, representing the northern and the southern railways, were amalgamated, forming the organization now known as The American Railway Association, representing practically the entire mileage of the North American continent, and constituting the greatest body of railway men on earth. Without the standard gauge, the Master Car Builders' Association—although organized 19 years before—could never have reached its present state of development, which entitles it to rank as one of the most remarkable organizations of modern times.

**Standard Time.**—The affairs of even the most primitive people demand some means of computing time, and to devise the various means suitable to the advancing stages of society has been a perplexing problem in all ages. The sun dial, the hour glass, the burning candle, the wooden wheel clock and the watch represent successive steps in the solution of the problem. The watch and the devices that preceded it were simply instruments for recording time, and it was in the perfection of this instrument only that society was concerned prior to the advent of railways. As the computation of time is based upon the rotation of the earth with reference to the sun, all places located on different meridians must actually have different time. In other words, it is noon (solar time) at each place when the meridian of that place is beneath the sun.



...directly under the sun. Before the appearance of railways, each community, to a great extent, lived to itself and was a law unto itself and therefore, had its own local or solar time. This served well enough the purposes of that day, but railways, extending for the most part east and west, through many communities, found this variation the source of the greatest annoyance and confusion. More than fifty different standards of time prevailed, each road taking as its standard the local time of some city in its territory. This condition existed till November 18, 1883, when the railways adopted "standard time," which is simply an arbitrary method whereby every place in Canada and the United States, instead of taking the solar time of its own meridian, adopts the time of one of five meridians—60°, 75°, 90°, 105°, 120° west of Greenwich. These meridians mark five different times—Atlantic, Eastern, Central, Mountain and Pacific—each varying from the other by an even hour added to the east and subtracted from the west. Railway time is not, therefore, really correct time; but an arbitrary standard adopted from necessity. It affords the anomalous example of a demand for a standard being so great as to justify its adoption at the sacrifice of correctness. Standard time has now been almost universally introduced, and the people generally depend upon the railways to furnish them the time in all localities. The subject cannot, however, be considered as finally settled. At the last meeting of the American Railway Association standard time was made the subject of a lengthy and learned report. While the meridians, already mentioned, are supposed to fix the points for changes in time, there is a wide departure among the various roads in adhering to such points. For example, the New York Central changes from Eastern to Central time at Buffalo, (located approximately at the 79° meridian) while the parallel Canadian roads change at Windsor, Sarnia and Fort William. The latter place is approximately on the 89° meridian and, therefore, has an actual difference from Buffalo time of 40 minutes. This variation is illogical and, to a considerable extent, unnecessary. While it does not occasion any great practical inconvenience, a greater degree of uniformity is desirable.

**Standard Signals.**—In the matter of hand and audible signals there prevails an almost absolute uniformity on all railways of Canada, the United States and Mexico. Perhaps in no other one method of operation has there been adopted a more exact and general standard than that known as the Uniform Train Signals put into effect on Nov. 16, 1884. Prior to the adoption of uniform signals each road had its own code, with the result that there was great confusion, involving risk of train accidents, at all junction points, terminals and roads used by two or more companies, and especially when employes trained on one road, entered the service of another. The uniform signals were the result of much investigation and discussion by the representatives of the two Time Conventions, (the bodies which in 1886 formed the General Time Convention, later known as the American Railway Association) and, with slight modifications dictated by subsequent experience, these signals may now be considered almost perfect in their conception and application.

If I may be permitted to offer a suggestion on a subject which the thought of able men has left so little open to further discussion, I would recommend, in the interest of safety, that the signal for starting a passenger train—two blasts of the air whistle—be eliminated, so that a passenger train may

be started only on hand signal from the conductor. The objection to the air signal for this purpose is threefold. 1st. It permits trainmen to be upon passenger car platforms, or inside the cars, at the time the train is started. Considerations of public safety demand that the conductor and trainmen of a passenger train should stand upon the station platform as the train starts. 2nd. As two blasts indicate "start" when the train is standing, and "stop" when the train is moving, confusion may, and often does, result. The locomotive man, not being prepared to start exactly upon receiving the signal, may be just starting when a second signal is received. That signal may be intended as a repetition of the first, and prompted by impatience at the failure to act promptly upon the first. It may also be intended as a stop signal, made necessary to prevent injury to some person in the act of getting on or off the train or in other hazardous positions. A misinterpretation by the locomotive man in one way will result in an unnecessary delay, and in another way may mean personal injury or damage to property. 3rd. Formerly, one blast of the air was the signal to start. This was changed to two blasts, because it was thought that, while the cord might by mistake or design of a passenger or other person, be given one pull, it would hardly receive two in the proper succession, and for the further reason that one blast was produced in the locomotive cab when a valve was opened and the air extended in the signal line. But the change has by no means removed danger from these two contingencies, especially from the latter. Suppose that in making coupling between cars—as when an extra car is put upon a train, or in coupling up after making a switch—the trainman or carman first opens the valve of the signal line at the rear end of the forward car and then opens the valve at the forward end of the rear car, there will be two distinct reports in the cab which a driver may naturally take as the signal to start. I personally witnessed an actual occurrence of this nature where a trainman was dragged a considerable distance, with his body across the rail, before the train, started on this unintentional signal, could be brought to a stop.

**Standard Rules.**—The Standard Code of Rules was adopted by the American Railway Association in 1887, and in 1889 was divided into Rules for single and double track operation. This code has been put into effect on most of the railways in Canada and the United States, but with so many modifications and additions to meet local conditions and individual opinions that, with the exception of hand and audible signals, already referred to, which were incorporated as a part of the Standard Code, and the methods of movements by train orders and block signals, there prevails a considerable divergence in methods. The American Railway Association has a permanent committee, styled The Train Rules Committee, for the consideration of changes in the Standard Code, and for answering inquiries and giving interpretations upon any rule. The rules of the Standard Code relate almost entirely to the operation of trains, and are intended to be of such general nature as to permit their adoption by all roads.

In Canada the Railway Act gives the Board of Railway Commissioners power to pass upon rules for the "operation of trains"—see sections 30, 268 and 269—and in July, 1909, the Board, by order 7563, approved what is termed the Uniform Code, which is based upon, and follows very closely, the Standard Code. Owing to the authority exercised by the Board of Railway Commissioners, there is in Canada a far greater

uniformity in operating rules than in the United States, where neither the Interstate Commerce Commission, nor the state commissions approve rules of the railways.

### Application for Establishment of Cartage Service at Fort William Refused.

In dealing with the Fort William Board of Trade's application to the Board of Railway Commissioners for an order requiring the establishment of a cartage service at Fort William, Ont., or the abolition of the railway companies' custom of collecting the consignor's cartage from the consignees, the Assistant Chief Commissioner, D'Arcy Scott, gave the following judgment recently:—

The railway companies have agreements with cartage companies in a number of cities and towns in Canada whereby the cartage company undertakes to call for and deliver freight for the railway companies on a schedule of charges. These cartage companies are not under the board's jurisdiction, and it is purely optional with a railway company to have such a service. This board has no jurisdiction to order a railway company to establish a cartage service, and therefore we cannot grant the request of the applicants for an order directing the railway company to establish a cartage service at Fort William. With regard to the practice which the railway companies have been following in some places of collecting the consignor's cartage charges from the consignees when collecting the freight for the railway haul, it seems to me the remedy for this evil is in the hands of the consignees themselves. If they do not want to pay the consignor's cartage to the railway company, I see no obligation on them to do so. The railway company has no right to withhold delivery of the freight because the consignees refuse to pay the consignor's cartage; and, as the cartage appears as a separate item on the freight bill, it would be a simple matter for the consignee to deduct that amount from the total amount demanded by the railway company.

The matter came before the board some years ago, and a memorandum of Commissioner McLean, concurred in by the Chief Commissioner, Sept. 25, 1913, was issued to the railway companies and a number of boards of trade, a copy being sent to the Secretary of the Fort William Board of Trade. A notice having been issued by the railway companies to the effect that it was their intention to discontinue the practice of collecting the consignor's cartage charges from the consignee, a strong protest was made to the board by delegates of a number of western shippers at a conference at Regina, Dec. 18, 1913, against the withdrawal of this practice by the railway companies. A number of boards of trade of western cities joined in the protest. As a result of this protest, representatives of the Grand Trunk Pacific and the Canadian Pacific Railway Companies, by memorandum dated Dec. 19, 1913, agreed to continue the practice of collecting consignor's cartage charges from consignees in cases where the railway companies had recognized cartage agents at the point of shipment.

I entirely agree with the views expressed by Mr. Commissioner McLean in his memorandum already referred to, when he said:—"The question as to whether the consignees should, or should not, pay advanced cartage to the railway is one entirely of contract between the parties. The board has nothing to do with it, nor is the work done by the railway in any manner a railway service or facility within the meaning of the Railway Act." That being so, I do not see that the board can take action in this matter.



## General Inspection Car on the Grand Trunk Railway.

As mentioned in Canadian Railway and Marine World for November, a general inspection of G.T.R. was made during October by 50 officials from all parts of the lines. A specially designed car, which is illustrated herewith, was built for the inspection. It is about the same size as one of the company's old open vestibuled baggage cars, with the observation end completely glazed, similar to the rear end of the observation cars used at the back of some of the passenger trains. The glazed end consists of a central door with large window panel, and two side windows, all the windows being of nearly full depth.

Back from the observation end, the floor was tiered, with a rise of 4 ins. in each tier, the tiers being spaced with the usual car seat spacing. Eight tiers carried this arrangement back to about the centre of the car. On each level of the tiers, there were placed two old passenger car seats, one on each side in the usual manner, with a central aisle. This provided 16 seats, or an observation seating capacity of 32. From the highest tier level, a flight of 4 steps leads down to the car level. In the rear or lower floor section of the car, there is a table between two car seats, and along the walls, there are 9 arm chairs.

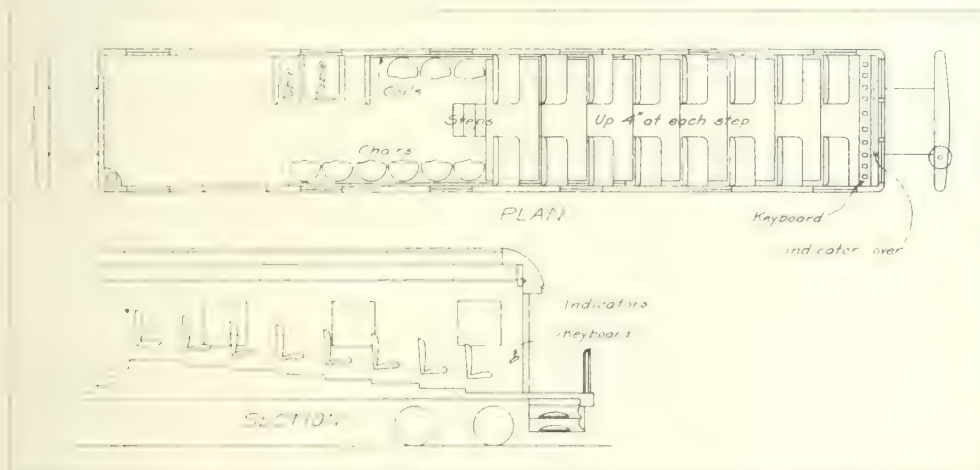
In front of the observation end windows, there is a narrow table running the width of the car, on which there are 10 sets of keys, arranged in pairs, each pair to be

tion, which is 5 miles long for single track, and 4 miles for double, an average of the

observations was struck. The summation of these observations for the division is a measure of its standing. The committees were arranged so as to produce impartial judgments.



Inspection Car, Grand Trunk Railway, Showing Observation Window.



Floor Plan and Section of Inspection Car, Grand Trunk Ry.

manipulated by one observer. The several sets of keys are named respectively, Line, Surface, Joints, Tie Spacing, Drainage Banks, Ditches, Ballast, Station Grounds, Policing, Fencing, Buildings, Spikes, Side Tracks. Under the several headings is divided all the work that comes under the care of the maintenance of way departments. Immediately over the keyboard, under the decking, there is a large 10 unit annunciator indicator, correspondingly marked with the above lettering in larger type that can be seen from the rear of the car. The annunciator units are electrically operated from the keyboard below.

Along the front row of seats before the keyboard desk, five officials observed the line, and outlined their judgments on the different conditions of the track on the annunciator above. The party on its trip each day appointed a special committee of five track and bridge and building supervisors, each of whom was delegated to operate two keyboards, at the end of each mile, registering the judgment of that mile on the annunciator above. In the rear of the car, clerks placed at the desk, noted these observations, and at the end of each sec-

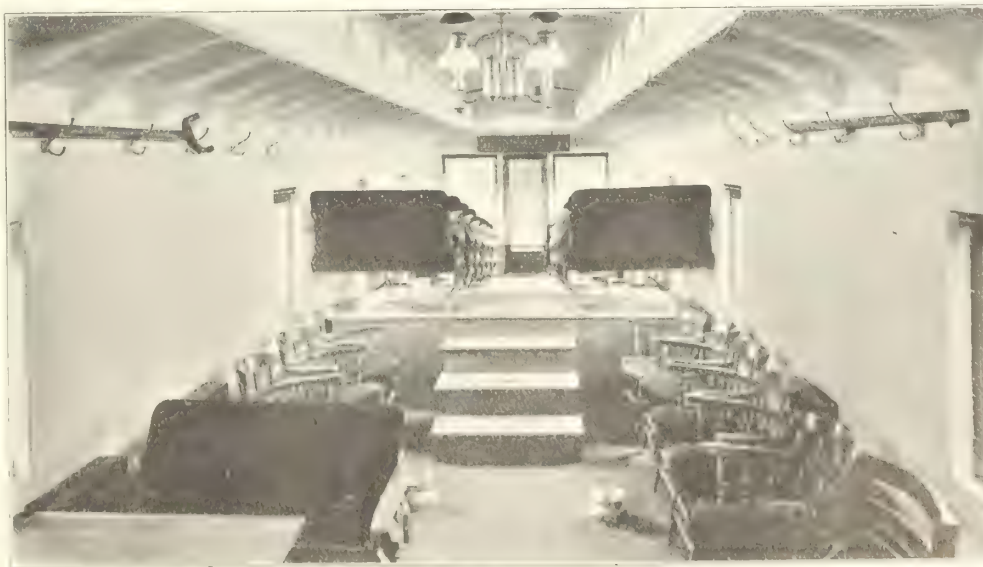
The car covered the entire system from Portland, Me., to Chicago, in a train of 9 cars. The 50 officials comprised representatives from all sections of the maintenance of ways departments, among whom, not only will a friendly rivalry be instilled, but from observations of other men's work, higher ideals will be developed, and the men at the same time brought into closer touch with their superiors.

### Valcartier Transportation Charges.—

Replying to questions in the House of Commons, Feb. 15, the Minister of Militia stated that \$19,098.89 had been paid to the Canadian Northern Ry. for transportation and all other services in connection with Valcartier Camp, and of this amount, \$7,965.24 was represented by express charges.

### Canadian Railway Club.—E. Hungerford.

Advertising Manager, Wells Fargo & Co.'s Express, read a paper on railway advertising before the club in Montreal, Mar. 9.



Interior of Inspection Car, Grand Trunk Ry., Showing Tiered Observation Seats.



## Birthdays of Transportation Men in April.

F. G. Adams, Commercial Agent, G.T.R., and Division Freight Agent, G. T. Pacific Ry., Winnipeg, born at St. John's, Nfld., Apr. 6, 1878.

W. H. Ardley, Comptroller, G.T.R., G. T. Pacific Ry., Montreal, born at London, Eng., Apr. 24, 1858.

Jas. Black, Freight Claim Agent, C.P.R., Vancouver, B.C., born near Seaforth, Ont., Apr. 19, 1858.

C. G. Bowker, General Superintendent, Eastern Lines, G.T.R., Montreal, born at Medford, N.J., Apr. 21, 1871.

S. P. Brown, M. Am. Soc. C. E., M. Am. Soc. M. E., Chief Engineer, Mount Royal Tunnel and Terminal Co., Montreal, born at Dover, Me., Apr. 29, 1877.

W. J. Camp, Assistant Manager Telegraphs, C.P.R., Montreal, born at Oakville, Ont., Apr. 22, 1855.

A. V. Collins, Canada Steamship Lines, Ltd., Toronto, born at Island Pond, Vt., Apr. 21, 1868.

A. E. Edmonds, General Agent, C.P.R., Detroit, Mich., born at Woodstock, Ont., Apr. 8, 1866.

born at Renfrew, Ont., Apr. 15, 1871.

J. A. Macgregor, Superintendent, District 4, Alberta Division, C.P.R., Edmonton, born at Dufftown, Scotland, Apr. 5, 1873.

B. R. Marsales, District Freight Agent, Canadian Northern Ry., Regina, Sask., born at Guelph, Ont., Apr. 13, 1887.

P. Mooney, General Freight and Passenger Agent, Halifax and South Western Ry., Halifax, N.S., born at St. Catherines, Que., April 19, 1871.

J. O. Norrie, Travelling Passenger Agent, Cunard Steamship Co., Winnipeg, born at Belfast, Ireland, Apr. 20, 1879.

G. D. Perry, General Manager, Great North Western Telegraph Co., Toronto, born at Whitby, Ont., April 19, 1858.

R. A. Pyne, Superintendent of Shops, C.P.R., Winnipeg, born at Toronto, April 10, 1874.

R. S. Richardson, Assistant Superintendent, Intercolonial Ry., Moncton, N.B., born at Napanee, Ont., April 9, 1865.

F. Rioux, Assistant to President, Reid Newfoundland Co., St. John's, Nfld., born at Trois Pistoles, Que., April 18, 1867.

## Quebec Public Utilities Commission's Orders

The following orders have recently been issued:

Asbestos and Danville Ry.—Approval of tariffs of tolls on line from Asbestos to Danville, about five miles, and charges for switching service. J. R. Pearson, Asbestos, Que., Manager.

Quebec and Saguenay Ry.—Extending to May 15, 1915, time fixed for installing gates at grade crossing at Pointe-au-Pic, Que.

Canada and Gulf Terminal Ry.—Ordering company to fix the minimum weight for car load lots of pulpwood shipped over its line at 40,000 lbs., for cars 35 ft. or over in length, instead of 50,000 lbs.

Quebec Central Ry.—Granting permission to the town of East Angus to open a crossing over Q. C. R. tracks, to connect Bernard St. with St. John St.

Authorizing the opening for traffic of the extension of the Chaudiere Branch from St. Sabine to 10 miles east.

Montreal Tramways Co.—The Montreal City Council applied for an order to regularize the crossings over the M. T. Co.'s right of way at eight streets. The President of the Commission was requested to view the crossings. He subsequently reported favoring certain crossings, and disapproving of others, and recommended that the work on the crossings approved should be put in to within 18 ins. of the tracks by the city, and the remaining width by the M. T. Co., the cost of the maintenance to be apportioned on the basis of the work done by each. An order was subsequently issued on this basis.

Granting permission to the City of Montreal to continue the grade of Cadillac St., Longue Pointe ward, over the company's right of way as a level crossing.

## Suggestions Invited by the Canadian Pacific Railway Management.

George Bury, Vice President, Montreal, has issued the following circular to all employees:—

"By the President's direction you are invited to send at any time to C. H. Buell, Secretary of the Pension Department, suggestions looking to continued amicable relations with the public; improving the conditions of employment, and increased efficiency of our operations. It is believed that there is much talent in such a vast organization as ours that never has had an opportunity of coming to the front, and this method is to be tried in an endeavor to bring such talent to light. Letters will be treated as confidential and will be passed upon periodically by a committee, so that anything of worth may be fully recognized. It is I hope, needless to say that the object is to obtain the benefit of the ideas of those working with us, and not a means for airing grievances, which if they exist should go through the usual channels as they do in all successful organizations."

In hardening high speed steel taps, threading dies, reamers and milling cutters, it is good practice to insist on slow pre-heating in a furnace at 1,500 degrees Fahr., and then submit to a temperature of 2,200 degrees Fahr., or move to an adjacent furnace.

Rail ingots have small surface flaws, which, on rolling, draw out into long lines or seams, leaving an incipient weakness in the finished rail, that may or may not extend, depending on the extent of the seam and the service to which the rail is subjected.



Observers' Keyboard and Overhead Indicators, Inspection Car, Grand Trunk Ry. See pg. 121.

B. C. Gesner, Moncton, N.B., formerly Air Brake Inspector, I.R.C., now Eastern Sales Agent, Galena Signal Oil Co., born at Cornwallis, N.S., April 23, 1850.

J. Murray Gibbon, General Publicity Agent, C.P.R., Montreal, born at Udewella, Ceylon, Apr. 12, 1875.

V. A. Harshaw, Superintendent, District 1, Atlantic Division, C.P.R., Brownville Jct., Me., born at Mono, Ont., Apr. 26, 1865.

A. Hatton, General Superintendent of Car Service, C.P.R., Montreal, born at London, Eng., Apr. 12, 1869.

J. M. Horn, District Freight Agent, Canadian Northern Ry., Edmonton, Alta., born at Allanton Mills, Lanarkshire, Scotland, Apr. 12, 1880.

B. S. Jenkins, ex General Superintendent, C.P.R. Telegraphs, Winnipeg, born Apr. 8, 1859.

J. H. Johnston, Superintendent of Bridges and Buildings, Eastern Lines, G.T.R., Montreal, born at Uxbridge, Ont., Apr. 22, 1866.

J. Kyle, Master Mechanic, Western Division, Canadian Northern Ry., Edmonton, Alta., born at Toronto, Apr. 11, 1877.

G. W. Lee, Commissioner, Timiskaming and Northern Ontario Ry., North Bay, Ont.,

W. A. Ritchie, District Superintendent, Pullman Co., Montreal, born at Edinburgh, Scotland, Apr. 13, 1854.

E. W. Smith, Superintendent, Dining and Parlor Car Service, G.T.R., Toronto, born at North Bridge, Mass., Apr. 21, 1869.

W. S. Tilston, Chief of Montreal Board of Trade Transportation Bureau, born at Manchester, Eng., Apr. 14, 1877.

E. D. Toye, Storekeeper, Ontario Grand Division, Canadian Northern Ry., Toronto, born at Dalston, Ont., Apr. 27, 1891.

W. Woollatt, General Manager, Essex Terminal Ry., Walkerville, Ont., born at Weedon, Hertfordshire, Eng., Apr. 2, 1855.

H. J. White, General Foreman, Car Department, Quebec Grand Division, Canadian Northern Ry., Joliette, Que., born at Brownington, Vt., Apr. 1, 1871.

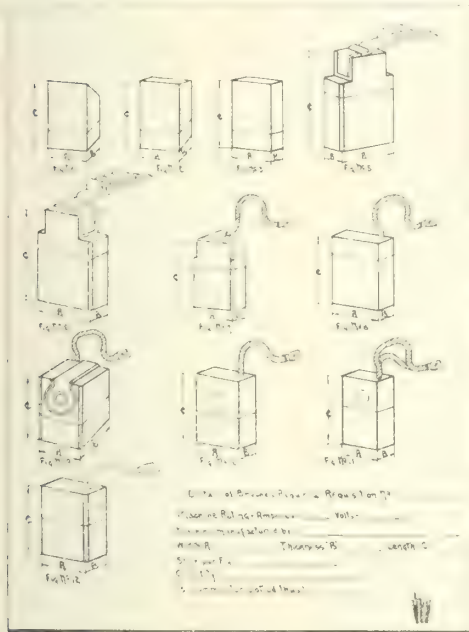
That watertight concrete is possible is demonstrated by a concrete water tank on the Baltimore and Ohio Rd., made with a 1:1½:3½ mixture, to which was added slaked lime while mixing, the inner and outer surfaces being finally coated twice with a cement coating.



# Railway Mechanical Methods and Devices.

## Lighting Generator Carbon Brush Diagrams for Canadian Northern Equipment.

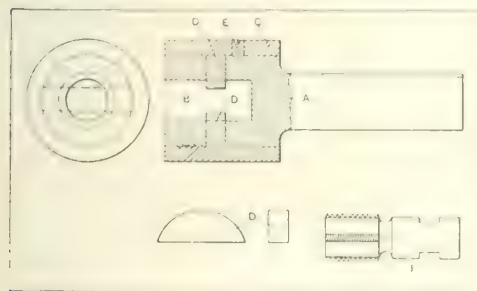
In view of the difficulty experienced by the C.N.R. mechanical department in supplying the correct carbons for generator repairs, owing to the insufficiency of the information supplied from the places where the repairs were being made, another system of describing the brushes became necessary. From an inspection of the several dif-



Carbon Brush Diagram on Canadian Northern Railway.

ferent types of brushes shown in the accompanying illustration, it will readily be seen that the man making the repair might very readily wrongly describe the size and kind of brush required, leading to loss of time and confusion through the wrong brush being supplied from the stores as a result of incorrect ordering.

To obviate this, a sheet of perspective views of all the different types of brushes in use on the system, as shown in the



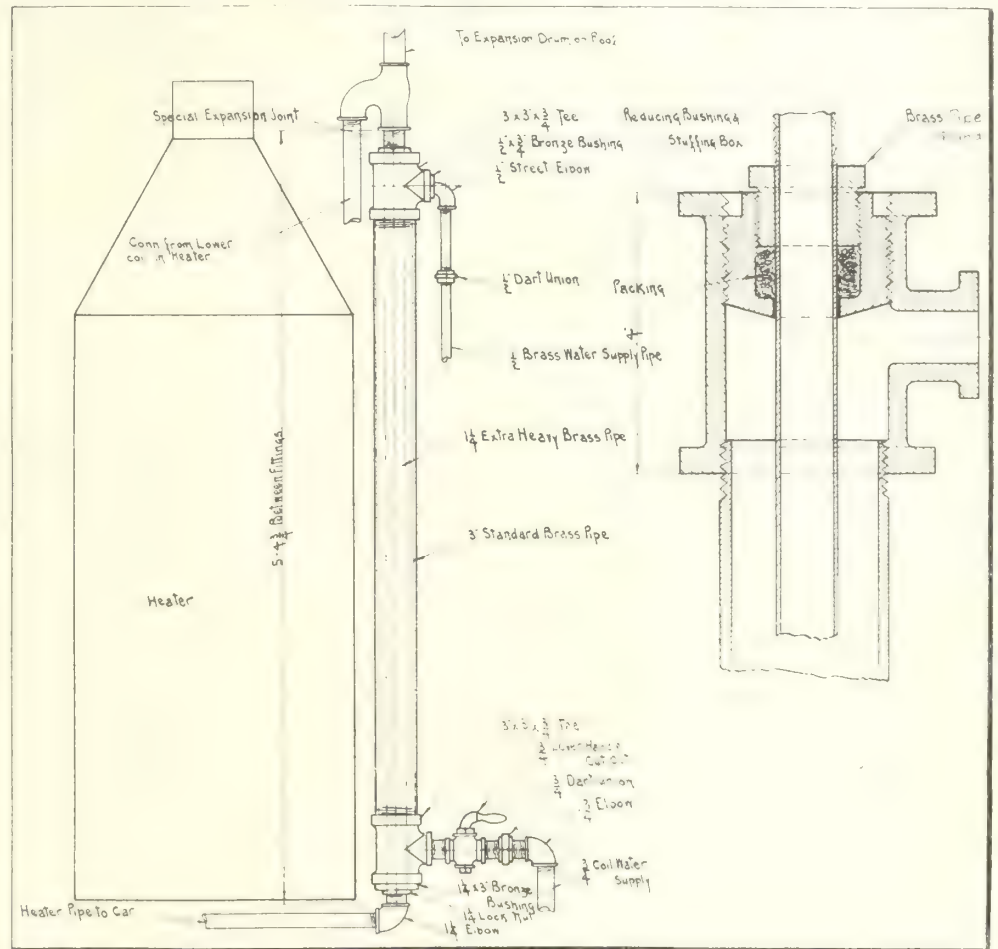
Tap and Reamer Holder for Turret Lathe.

accompanying illustration, was prepared, the sheet also containing blanks to be filled in with additional necessary identification data. Blueprints of these sheets are supplied all the repair points, and when it becomes necessary to order a new brush of a particular type from the stores, instead of a wordy description being required, it is only necessary to tick off the kind of brush required, as shown in the blueprint, and fill in the data required. No other information is required. This requisition sheet forms an excellent record for the

mechanical department, showing the several types that have the best characteristics, etc.

## Tap and Reamer Holder.

The tap and reamer holder described in the following has been found very useful on turret lathe work, as it is of simple though rigid construction, and there is practically nothing to get out of order. It will be seen that there are no set screws or other projecting parts on the holder which can injure the operator's hands or cause accidents through catching loose sleeves or other parts of his clothing. The body and shank of the holder are made of a single piece of soft steel, the shank being turned



Hot Water Jacket with Expansion Joint and Connections to Car Heater.

to fit the turret hole and milled flat on one side to form a bearing for the set screw in the turret. The socket B is bored out about 0.008 in. larger than the shank of the tap to provide the necessary float.

As taps used in turret lathes are frequently made special, their shanks can be made to suit the holder. The taps for this holder have two flats milled across their shanks as shown at F; this allows the shanks to be made short and effects an economy in tool steel. It will be seen that two slots are milled in the holder to receive two steel blocks D. In assembling the tool, the shank of the tap is inserted in the socket B, after which the blocks D are dropped into place, and the collar C is then slipped on and held by a headless set screw. The holder can be made with one block D and one flat on the shank of the tap, but as described, the strain will be more evenly distributed. Machinery, New York

## Expansion Joint in Car Heater Coil on Canadian Northern Passenger Cars.

The C.N.R. mechanical department had so much trouble with the inner pipe of its passenger car hot water jackets in the heating coils breaking, that a different method of installing became most desirable. The hot water jacket layout is shown in the accompanying illustration. In the former method of installing, the inner pipe was secured in the 3 x 3 x 3/4 in. T's, both top and bottom, by means of reducing nipples, making a rigid connection. In consequence of the difference in lengthwise expansion of

the inner and outer pipes, due to the difference in temperatures, the outer pipe, being the stronger, would frequently cause the rupture of the inner one. This was a most fruitful source of heater breakdown.

In the layout shown herewith, the lower T connection is left as formerly, but the upper connection is made into an expansion joint with expansion bushings. A detail of the upper connection is shown to the right of the heater. In place of the reducing nipples in the T, reducing from 3 to 1 1/4 in., there is screwed into the T a reducing bushing and stuffing box, the hole through the centre being a clearance fit for the 1 1/4 in. pipe. In the packing room packing is placed, with a brass pipe gland above, screw fitted into the bushing, whereby a tight joint may be secured. This permits expansion, or contraction, of the inner pipes, independent of the outer casing, and consequently eliminates the rupturing of the



## Compensation for Carrying Mails on Railways.

A subscriber has asked us for information as to the rates paid railways for carrying mails. For a number of years the railway companies have complained to the Dominion Government that the rates they have been paid for this service are altogether inadequate. Towards the end of 1913 they pressed the matter very strongly on the Postmaster General. Representatives of the principal lines had interviews with him, but no arrangements could be agreed on, and, exercising the arbitrary power conferred by the Post Office Act, he had the rates fixed by Order in Council on Jan. 27, 1914, as follows:

For a full postal car, which shall not be less than 60 ft. long, unless otherwise agreed to by the Postmaster General, equipped for the sortation and handling of mails, including parcels, and the accommodation and transportation of postoffice officials on duty, 16 cts. a car mile.

For a half car, or section of a car, which shall not be less than 30 ft. long, unless otherwise agreed to by the Postmaster General, completely equipped in the same manner as a full postal car and the transportation of postoffice officials, 9 cts. a car mile.

The equipment and accommodation furnished for postal cars shall include light, heat and drinking water.

For the conveyance of closed mails carried in baggage cars in charge of baggage-men or other railway officials in charge of such cars on regular trains, 4 cts. a car mile.

For special trains ordered by the Postoffice Department for the transportation of ocean mails, \$1.25 a train mile when no passengers, baggage or freight are carried. When cars for the conveyance of passengers, freight or baggage are attached to such trains by the railway company, the rate shall be \$1 a mile.

The rate of 16 cts. a car mile shall apply to all cars used wholly for mail purposes, whether hauled in special trains run by the railway companies for their own convenience, or on regular trains. However, the department will not require the railways to haul more than one car with mails on any such special train, and if it does, the rates provided for in the preceding section—that is, \$1 a mile—will apply.

All railway companies shall provide, without extra charge to the Postoffice Department, for the care and storage of mails at junction points when such mails have to be held or stored for train connection, and are to be transferred from one train to another of the same company. The work of transferring mails between the trains of any railway shall be performed by the railway company, except at points where the department has already provided for such transfers, or may hereafter agree to provide for them owing to growth or development.

In writing on March 3, 1914, to the Chairman of the Mail Transportation Committee at Washington, D.C., the Canadian Postmaster General said: "No special arrangements have been made for the transportation of parcels, which have to be conveyed in the same manner and paid for at the same rate as other mail matter. Under the arrangements above described, the Postmaster General will simply require the railways to furnish whatever car space may be necessary for the accommodation of mails of every description, and will pay accordingly. The increase that the railways will earn under the new schedule of rates, calculated on the basis of the service as it existed last year, will amount to about \$786,000. If it is found, however, that the increased amount of mail to be handled, owing to the introduction of parcel post,

will make it necessary for the railways to furnish extra accommodation, they will, of course, be paid a larger amount than that above mentioned."

## Electric vs. Steam Operation of Tunnel Railways.

The report of the Mersey Ry., operating the line under the Mersey at Liverpool, Eng., for 1913, gives some interesting comparisons of the results obtained under the two systems. The last year of operation under steam was 1902. In the intervening years there has been a steady increase in the receipts and of the number of passengers, and a decrease in the percentage of operating expenses to gross receipts, although the rate of wages has been substantially increased. Following is a comparison of the electric operation in 1913, and of steam operation in 1902:—

	Electric.	Steam.
Gross receipts .....	£122,631	£61,252
Expenses .....	64,285	57,537
Percentage of expenses to receipts .....	52½	94
No. of passengers .....	13,241,615	5,942,002
No. of season tickets .....	14,231	3,266
Total passengers .....	16,524,741	6,991,982
Surplus over working expenses .....	£58,347	£3,715
Balance after providing for rent, renewal fund and interest on first debentures .....	£20,202	£22,662
Additional surplus required to meet debenture interest .....	£6,707	£50,887

## Railway Construction in Alberta in 1914.

The Premier of Alberta in the course of a statement, Feb. 11, on provincial affairs, said that the railway mileage in the province had doubled during the last three years, that 22% of the railway construction in Canada during 1914 was in the province, and that there is now one mile of railway for every 125 persons in the province. The province had guaranteed bonds for the building of 2,435.97 miles of railways, of which there are now completed and in operation or being made ready for operation, 1,230.79 miles, and 347.02 miles graded and ready for tracklaying. At the end of 1913 tracks had been laid on 988 miles, and 280 miles of grade was ready for steel. The mileage at Dec. 31, 1914, was distributed as follows:—

	Miles track laid.	Miles extra grading.
Canadian Northern lines	656.29	198.02
Grand Trunk Pacific Ry.	259.50	....
Edmonton, Dunvegan and British Columbia Ry. . .	240.00	50.00
Alberta and Great Waterways Ry. ....	75.00	62.00
Lacombe and Blindman Valley Ry. ....	....	37.00

The total railway mileage in the province is 4,097, distributed as follows:—Canadian Pacific Ry., 1,887 miles; Canadian Northern Ry. lines, 1,188 miles; Grand Trunk Pacific Ry., 907 miles; Edmonton, Dunvegan and British Columbia Ry., 240 miles; Alberta and Great Waterways Ry., 75 miles. In 1905 there were only 1,060 miles of railway in the province, owned by the C.P.R. and its subsidiary, the Alberta Ry. and Irrigation Co.

**Richard Marpole's War Contribution.**—London, Eng., cablegram to Montreal Star, Mar. 3:—"Twenty Welsh volunteers from British Columbia, got together by Richard Marpole, General Executive Assistant C.P.R., were given a hearty welcome at Colwyn Bay, where they joined Sir Hamar Greenwood's battalion of South Wales Borderers. They were met at Liverpool by Lieut. Long, formerly of Vancouver, also Sergt.-Major Edford, formerly of the Scots Guards. The whole battalion escorted them to their billets amid much enthusiasm."

## Government Advances to C.N.R. and G.T.P.R.

Under the authority of orders in council, dated Sept. 5 and 26, and Oct. 24, 1914, the Dominion Government advanced to the Canadian Northern Ry. \$10,000,000 in the form of an issue of Dominion notes against a pledge by the company of its guaranteed securities issued in pursuance of the provisions of the Canadian Northern Railway Guarantee Act, 1914, by placing the sum so advanced to the credit of the Minister of Finance for payment out under the provisions of the trust deed securing the issue of these securities.

A similar advance of \$6,000,000 was made to the Grand Trunk Pacific Ry., against a similar pledge by the company in pursuance of the provision of the Grand Trunk Pacific Guarantee Act, 1914.

The Government's action in both cases has been ratified by Parliament.

## Marconi Wireless Telegraph Company Annual Report.

Following are extracts from the report for the year ended Jan. 31, 1914:—

The contract with the Canadian Government for the operation of the coast stations on the Great Lakes has been completed by the addition of new stations at Port Burwell, Toronto and Kingston. The operation of these has been placed on a satisfactory basis, and this section of the business should henceforth produce a steadily increasing revenue. The company secured the contract for the construction of these stations.

Under agreement with the Newfoundland and Canadian Governments the company operates 10 small stations in Newfoundland and Labrador, 22 stations on the Canadian Eastern Coast, 8 stations on the Great Lakes. The Newfoundland stations are subsidized \$4.63 a year, and the Canadian stations \$89,200 a year.

According to the latest government return covering steamships of Canadian register there were 93 vessels equipped with wireless telegraphy, of which 90 are equipped with the Marconi system. The policy of systematically improving the contracts for steamship operation is being successfully carried out.

With the completion of the duplex system the transatlantic receiving station at Louisburg, N.S., has been brought into operation, in addition to the installation for high speed transmission at Glace Bay, N.S. To provide for additional traffic with these improved facilities, a special business campaign was inaugurated, which has so far yielded gratifying results, and which should improve the future transatlantic traffic. This policy will be continued until the full capacity of the circuit is reached.

As a result of the destruction of the operating house by fire on May 5, the Cape Race station in Newfoundland suffered severely during the year. Prompt measures were taken to reestablish a temporary station, which was in operation within two days, but owing to the isolation of Cape Race it was not until Sept. 30 that a full commercial service could be resumed. Improved equipment has been installed, adding to the capacity of the station. The necessity for increasing the height of the masts has been strongly urged on the Government, and action has been taken for such construction, which will be completed before the end of this year. Thus equipped Cape Race will be the most important coast station on the North Atlantic Ocean, and the increase in earnings that can be expected is indicated by the results already apparent since the



installation of the improved plant. Owing to this unfortunate occurrence the ship traffic receipts show only a small increase over the previous year. Transatlantic traffic shows improved receipts for the year, and the revenue from the operation of the Marconi system on steamships and sales of apparatus shows decided progress.

Important legislation covering equipment of Canadian steamships with wireless telegraphy has been enacted. This law became operative on Jan. 1, 1914, and since the close of the past fiscal year a number of contracts have been made with shipowners covering vessels affected by the act.

A convention to consider means for increasing the safety of life and property at sea was held in London in Nov., 1913, one of

the results of which was a strong recommendation to the various governments participating to adopt still more stringent regulations concerning the equipment of vessels with wireless telegraphy.

Work on the contract with the Department of Railways and Canals for the construction of stations at Pas, Man., and Port Nelson, Hudson Bay, has been pushed forward and will be completed during this year. Owing to exceptional difficulties encountered by the Government through lack of terminal and transportation facilities, the company was unavoidably delayed in completing its portion of the work, but will not thereby be subjected to any financial loss. Owing to the isolation of the localities these difficulties had been anticipated.

Communication between the two stations was established in Feb., 1914, which was a source of gratification to the Government.

The balance sheet shows a profit of \$7,158.62 on the year's operations, leaving a balance of \$15,335.75 in deficit account. The capital stock is \$5,000,000.

### Amendment to Railway Act re Workmen's Injuries.

H. B. Morphy, M.P. for North Perth, Ont. in introducing a bill in the House of Commons, Mar. 1, to amend the Railway Act, Revised Statutes of Canada, chap. 37, sec. 2, clause 34, par. e, said the act as it stands includes, under the head of "working expenditure" of railways "(e) all rates, taxes, insurance and compensation for accident or losses." The bill which I ask leave to introduce extends the language of paragraph e to make it read in this way:

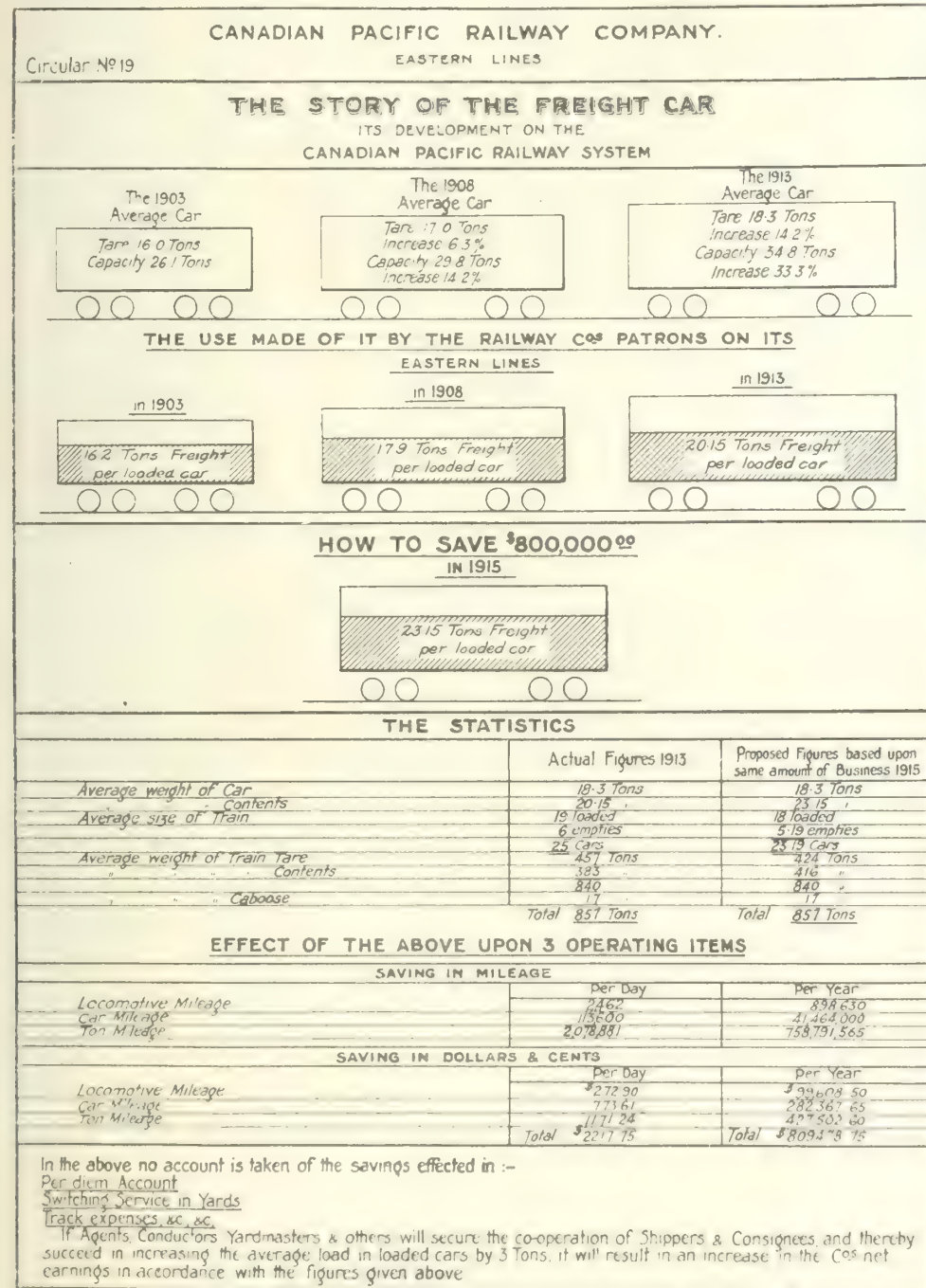
(e) all rates, taxes, insurance and compensation for accident or losses, including any such compensation payable under the provisions of any act of the Parliament of Canada or of any provincial legislature providing for the payment of compensation to workmen for injuries or in respect of industrial diseases.

The object of the bill is to extend to the workman who is injured the privilege of having his claim come under sec. 141 of the Railway Act in the same way as rates, taxes, insurance and compensation for accident or losses. It will give the claim of a workman who may suffer accident and loss priority as against a mortgage or bonding deed covering the railway's assets in the same way as rates, taxes and insurance now have a prior claim. This will bring the Railway Act into line with Ontario's new legislation dealing with compensation to workmen for injuries sustained. It is merely to extend the law as it stands, and it seems to be an amendment that is necessary in the case of a railway company which may be insolvent and unable to pay claims for losses. In such a case the workman's claim will have priority over a mortgage deed the same as the other elements now in the law have priority.

**Boiler Code.**—The American Society of Mechanical Engineers' boiler code committee has made a final report, which has been accepted by the society's council. The report is the result of the work of the original committee, of which J. A. Stevens was chairman, and an advisory committee of engineers representing various phases of the design, installation and operation of boilers. Among the railway representatives on the committee was H. H. Vaughan, Assistant to Vice President, C.P.R., Montreal. The code is considerably shorter than when originally brought out by the committee; and the rules laid down in it do not apply to boilers which are subject to U.S. federal inspection and control. The original committee and the advisory committee have been continued as one, and will meet once a year in order to make any changes that advances in practice may make necessary. At these meetings will also be taken up any change which may seem necessary in a rule because it works unnecessary hardship on any particular class of boiler makers or users.

**Each class of service on French railways** has its locomotive fuel carefully divided as to lump and slack, or briquettes and slack, by weight. Passenger service uses 20% slack and 80% lump or briquettes; fast freight, 40% slack; yard locomotives, 80% slack, etc.

**Walter White, Trainmaster, G.T.R., Palmerston, Ont.,** in remitting his renewal subscription, writes: "I could not very well get along without Canadian Railway and Marine World."



Office of the Asst Gen Manager  
Montreal November 8<sup>th</sup> 1913

Asst Gen Manager

Circular Issued by Canadian Pacific Railway respecting car loading.

A paper on "Some Maximums and Minimums in Train Operation," by Alfred Price, Assistant General Manager, Eastern Lines, C.P.R., was published in Canadian Railway and Marine World for February. The above is a reproduction of a circular he issued in Nov., 1914, to secure an increase in the average loading of cars.



## Orders by Board of Railway Commissioners for Canada.

The following orders, published in each issue of the *Canadian Railway and Marine World*, are passed by the Board of Railway Commissioners, so that subscribers to the paper have a continuous record of the Board's proceedings. No other paper has done this.

The following orders, immediately following the numbers, are those on which the orders were drawn.

23170. Jan. 15.—Authorizing Canadian Northern Ry. to build spurs for Helendale Gravel Co. and J. G. Mitchell, in Secs. 30 and 19-19-22, w. 2 m., Sask.

23171. Jan. 16.—Authorizing C.P.R. to remove agent from station at Tache, Ont.

23172. Jan. 18.—Approving re-location of C.P.R. station at Glasnevin, Sask.

23173. Jan. 15.—Approving proposed location of C.N. Alberta Ry.'s combined stations and section houses at Borlan, Chip Lake, Fulstow, Dayman, Lobstick and Calahoo, Alta.

23174. Jan. 16.—Rescinding order 19928, July 30, 1913, authorizing Vancouver, Victoria and Eastern Ry. and Navigation Co. (G.N.R.) to take lands in New Westminster District, B.C., for diverting Gunn and Brunette Roads and providing overhead crossing at North Road.

23175. Jan. 16.—Authorizing G.T.R. to operate over junction of its eastbound and westbound tracks at St. Henri, Que., without first stopping trains.

23176. Jan. 16.—Authorizing C.P.R. to build spur for The Cardston Milling Co., Cardston, Alta.

23177. Jan. 15.—Dismissing Canadian Northern Ry. application to remove connection between C.P.R. and Winnipeg Joint Terminals railway at Higgins Ave., Winnipeg, Man., certain firms to continue to have switching service from C.P.R.

23178. Jan. 15.—Authorizing Canadian Northern Ry. to build highway crossing between Secs. 2 and 11, w.2 m., at Invermay, Sask.; municipality to pay cost of maintaining crossing.

23179. Jan. 16.—Dismissing City of Calgary's application for order compelling Canadian Northern Ry. to carry out agreement with city, dated Oct. 24, 1912, re entrance of railway into Calgary; and ordering C.N.R. to provide a 5% grade at approaches to crossings at Thistle, Pine and Hungerford Sts., and Spruce and Poplar Aves.

23180. Jan. 19.—Authorizing Kettle Valley Ry. to cross C.N. Pacific Ry. at Hope, B.C.

23181. Jan. 20.—Relieving C.P.R. from providing further protection at crossing of highway at mileage 52.09, between Lots 15 and 16, Eaton Tp., Que.

23182. Jan. 16.—Approving revised location of G.T.R. siding to Pilkington Bros.' premises, North Cayuga Tp., Ont.

23183. Jan. 21.—Extending to June 1, time within which G.T.R. shall complete highway over its line in Tay Tp., Ont., required under order 22344, Aug. 5, 1914.

23184. Jan. 19.—Exempting Canadian Northern Ry. from erecting fences, gates and cattle-guards along its right of way at certain points in North Bay and Sudbury Districts, Ont.

23185. Jan. 21.—Authorizing Town of Walkerville, Ont., to build Lincoln Road across Essex Terminal Ry., at grade.

23186. Jan. 20.—Authorizing Kettle Valley Ry. to build bridges at mileage 20.0 over Ladner Creek; 14.84, Coquihalla Section; and 9.1 over Slide Creek, B.C.

23187. Jan. 18.—Authorizing Esquimalt & Nanaimo Ry. to build transfer track to connect Canadian Collieries (Dunsmuir), Ltd., track at Royston, B.C.

23188. Jan. 21.—Relieving G.T. Pacific Ry. and Canadian Northern Ry. from maintaining night signalman at crossing at South Saskatoon, Sask.

23189. Jan. 20.—Authorizing Canadian Northern Ry. to discontinue station agent at Margaret, Man., until Apr. 1.

23190. Jan. 20.—Authorizing Nelson & Fort Sheppard Ry. (G.N.R.) to discontinue stopping its trains on flag at Benson & Ross spur, B.C.; to stop on flag at Benton Pole Co.'s spur, and build short platform and small shelter there.

23191. Jan. 22.—Approving G.T. Pacific Telegraph Co.'s bylaw 3, passed Jan. 16, and rescind-

ing order 8016, Sept. 8, 1909, re issuing tariffs of tolls.

23192. Jan. 21.—Authorizing C.N. Ontario Ry. to build bridge across Beaver River, Thorah Tp., mileage 64.1 from Toronto; bed of river to be deepened 1 ft. for 100 ft. above and below bridge.

23193. Jan. 22.—Recommending to Governor-in-Council for sanction lease, dated Oct. 8, 1914, respecting New Brunswick Coal and Ry. Co.

23194. Jan. 22.—Approving plans and specifications of Moore Drain, to be built under Michigan Central Rd., Metcalfe Tp., Ont.

23195. Jan. 22.—Authorizing G.T.R. to use bridges over Birch Ave., Hamilton; over Grand River, Brantford; over Clubine's Creek, Aurora; over Holland River, near Newmarket; near Barrie; over Big Creek, Hawkestone; and over Kashe River, near Severn, Ont.

23196. Jan. 21.—Rescinding order 16070, March 5, 1912, authorizing G.T. Pacific Branch Lines Co. and Canadian Northern Ry. to operate over crossing in n.w. ¼ Sec. 18-48-25, w. 2 m., East Saskatchewan District, Sask., without first stopping trains.

23197. Jan. 23.—Approving Bell Telephone Co. agreement with Elmsley South Rural Telephone Co., Dec. 17, 1914.

23198. Jan. 23.—Exempting Canadian Northern Ry. from erecting fences, gates and cattle-guards between mileage 4.5 and 23.5, McGregor Tp., Ont., until land becomes settled or improved.

23199. Jan. 23.—Authorizing Michigan Central Rd. to rebuild pile trestle bridge 11.60 across Long Marsh Drain, Malden Tp., Ont.

23200 to 23204. Jan. 25.—Authorizing G.T.R. to use 12 bridges at different points on its Ontario lines.

23205. Jan. 23.—Authorizing C.P.R. to use 17 bridges on its London Subdivision, Ont.

23206. Jan. 25.—Authorizing G.T.R. to use bridges near Woodstock and near Weston, Ont.

23207. Jan. 26.—Authorizing Canadian Northern Ry. to build spur for North Battleford Mfg. Co., North Battleford, Sask.

23208. Jan. 26.—Authorizing C.P.R. to build siding for H. & H. Box Co., between Pembroke and Stafford, Ont.

23209. Jan. 26.—Approving plan of Edmonton, Dunvegan & British Columbia Ry. class A station house.

23210. Jan. 26.—Authorizing G.T.R. to build extension of siding for Lord & Burnham Co., St. Catharines, Ont.

23211. Jan. 25.—Authorizing Canadian Northern Ry. to build spur to stock yards at Calgary, Alta.

23212. Jan. 25.—Extending to May 26, time within which Canadian Northern Ry. shall complete spur for J. H. Carleton, Winnipeg, authorized by order 22086, May 26, 1914.

23213. Jan. 26.—Ordering C.P.R. and Western Canada Power Co., jointly to file supplements to C.P.R. Special Joint Tariffs, C.R.C. nos. W-1615 and 1806, providing joint rates from Stoltz Mfg. Co.'s mill to destinations shown in tariffs, via Ruskin, B.C., which shall not exceed rates from Ruskin by more than 2c. per 100 lbs.; Western Canada Power Co. to receive 3c. per 100 lbs. as its proportion.

23214. Jan. 26.—Ordering Esquimalt & Nanaimo Ry. to stop its passenger trains on flag at Admiral's Road, Esquimalt Tp., B.C., and build flag station shelter there.

23215. Jan. 27.—Authorizing Edmonton, Dunvegan & British Columbia Ry. to build across 16 highways in Tp. 78, R. 21, 22 and 23, w. 5 m., Alta.

23216. Jan. 27.—Authorizing Lake Erie & Northern Ry. to build at grade, across Toronto, Hamilton and Buffalo Ry. in Brantford, Ont.; to insert diamond in T.H. & B.R. at crossing, to be protected by interlocking plant; and rescinding order 22199, July 3, 1914.

23217. Jan. 23.—Authorizing Kettle Valley Ry. to cross C.N. Pacific Ry. temporarily, for construction purposes only, for 6 months from date, at Hope, B.C.

23218. Jan. 26.—Amending order 23180, Jan. 19, re Kettle Valley Ry. crossing of C.N. Pacific Ry. at Hope, B.C.

23219. Jan. 27.—Ordering Hamilton Radial Electric Ry. to relocate its tracks on ground provided for it on Sherman Inlet, Hamilton, Ont., and that Hamilton Cataract Power, Light, Traction Co. remove its transmission line to new location; work to be completed by May 1st, 1915; H.R.E. Ry. to use 10-ft. ties for tracks; cost of relocating and maintenance other than ordinary maintenance to be paid by city, until, in opinion of Board, it should be relieved.

23220. Jan. 29.—Authorizing British Columbia Public Works Department to build highway crossings over C.P.R. at two points near Malakwa.

23221. Jan. 28.—Approving Edmonton, Dunvegan & British Columbia Ry. location, mileage 307 to 331.89.

23222. Jan. 29.—Authorizing Canadian Northern Ry. to build across and divert highway between Secs. 15 and 16-28-2, w. 4 m., Alta.

23223, 23224. Jan. 28.—Relieving G.T.R. from

providing further protection at crossings 3 miles west of St. Thomas, and at Sundridge, Ont.

23225. Jan. 27.—Relieving C.P.R. from providing further protection at crossing at mileage 107.4, West Nissouri Tp., Ont.

23226. Jan. 30.—Approving location of Canadian Northern Ry. third class station at Dinsmore, Sask.

23227. Feb. 1.—Ordering G.T.R. to stop train no. 1 at Kerwood, Ont., to discharge passengers from London, or points beyond.

23228. Feb. 1.—Rescinding order 20630, Oct. 22, 1913, re operation by Canadian Northern Ry. and G. T. Pacific Ry. over crossing at Camrose, Alta., with leave to either of them to apply for permission to operate interlocking plants there.

23229. Feb. 1.—Extending, to Apr. 15, time within which Esquimalt & Nanaimo Ry. shall install bell at crossing of Victoria and Campbell River trunk road, south of Duncan Station, B.C., as required by order 23038, Dec. 23, 1914.

23230. Jan. 28.—Authorizing Imperial Bank of Canada, Niagara Falls Branch, to pay to G.T.R. \$2,000, with accrued interest, in connection with building of spur for Standard Crushed Stone Co., Windmill Point, Ont.

23231, 23232. Feb. 2.—Suspending until further ordered, 12 tariffs of New York Central Rd., 7 tariffs of Ottawa & New York Ry., 2 tariffs of Boston & Maine Rd., and 3 tariffs of Maine Central Rd., in so far as they increase rates between stations in Canada.

23233. Jan. 30.—Authorizing City of Montreal to extend Cadillac St. across C.N. Quebec Ry.

23234. Feb. 2.—Amending order 23013, Dec. 18, 1914, re Saskatchewan Government road over Canadian Northern Ry. in n.e. ¼ Sec. 33-43-16, w. 3 m.

23235. Feb. 1.—Authorizing C.P.R. to build branch for P. Lariviere, Montreal.

23236. Feb. 1.—Certifying correction in plan of C.P.R., Regina-Saskatoon and North Saskatchewan Branch, mileage 43.2 to mileage 132.69.

23237, 23238. Feb. 1, 2.—Authorizing C.P.R. to remove regular agents at Flower and Newtonville stations, caretakers to be appointed.

23239. Feb. 1.—Amending order 23091, Jan. 7, re C.P.R. siding for American Tar Products Co., La Salle, Que.

23240, 23241. Feb. 3.—Authorizing G.T.R. and Erie and Ontario Ry. (T.H. & B.R.) to operate over crossings in Moulton Tp. and Dunnville, Ont., without first stopping trains.

23242. Feb. 1.—Recommending to Governor-in-Council for sanction lease dated Oct. 4, 1914, between Fredericton & Grand Lake Coal & Ry. Co. and C.P.R.

23243, 23244. Feb. 1.—Approving agreements between Bell Telephone Co. and the Kingston, Ont., Roman Catholic Diocese, Jan. 2; and Plummer, Aberdeen and Galbraith Rural Telephone Association, Jan. 15.

23245. Feb. 3.—Authorizing C.P.R. to use bridge 9.3, Edmonton, Subdivision, near Red Deer, Alta.

23246. Feb. 4.—Approving agreement between Bell Telephone Co. and Apsley Telephone Co., Jan. 21, and rescinding order 11926, Oct. 11, 1910.

23247. Feb. 3.—Approving C.N. Ontario Ry. revision between mileage 89.22 and 90.47, North Orillia Tp., Ont.

23248. Feb. 3.—Relieving Canadian Northern Ry. from providing further protection at highway crossing between Secs. 21 and 22, Crozier Tp., Ont.

23249. Feb. 2.—Ordering G.T.R., within 60 days, to install improved type of automatic bell at crossing near Oakville, Ont., 20% of cost to be paid out of railway crossing fund.

23250. Feb. 1.—Ordering that C.P.R. and G.T.R. at Arnprior, Ont., be connected to provide reasonable receiving, forwarding, delivering and interswitching of traffic, work to be done by G.T.R., cost to be paid, half by G.T.R. and half by Gillies Bros.; cost of maintenance and protection to be paid by G.T.R.; work to be commenced by May 1 and completed within 30 days.

23251. Feb. 3.—Authorizing G.T.R. to build or rebuild bridges 69, near Harrisburg, Ont.; 28 and 27, near Paris, Ont.; 26 and 22, over Clarence St., Brantford, Ont.

23252. Feb. 6.—Approving clearances between poles already erected and nearest rail of London and Port Stanley Ry., and authorizing with respect to poles to be erected, a clearance of 7½ ft.

23253. Feb. 5.—Authorizing London St. Ry. and G.T.R. to operate half-interlocking plant on Dundas St., London, Ont.

23254. Feb. 5.—Authorizing Canadian Northern Ry. to open for traffic its line from junction with Camrose-Strathcona line to junction with Edmonton, Yukon & Pacific Ry., at Strathcona, Alta., 0.6 miles.

23255. Feb. 5.—Establishing collection and delivery limits of Canadian Northern Express and American Express Cos., in Fort Frances, Ont.

23256. Feb. 5.—Approving agreement between Bell Telephone Co. and Thamesville Telephone Co., Jan. 25, and rescinding order 6892, Apr. 26, 1909.



23257. Feb. 5.—Authorizing C.P.R. to use bridges 24, near Jasper; and 3.6, near Chauviere Jct., Ont.

23258. Feb. 5.—Relieving G. T. Pacific Branch Lines Co. from erecting fences, gates and cattle-guards from mileage 0 to 97, Melville-Regina Branch, Sask.

23259. Feb. 8.—Authorizing Edmonton, Dunvegan & British Columbia Ry. to build across highways between Tp. 78-26, w. 5 m. and Tp. 78-1, w. 6 m.; and between s. e.  $\frac{1}{4}$ , Sec. 13-78-3 and unsubdivided portion Tp. 78-2, w. 6 m., Alta.

23260. Feb. 8.—Authorizing Wabash Rd. to operate over crossing of Erie & Ontario Ry. (T. H. & B. R.) in Moulton Tp., Ont.

23261. Jan. 29.—Authorizing C.P.R. to build two sidings for J. Aybram, St. Elizabeth Parish, Joliette County, Que.

23262. Feb. 8.—Relieving C.P.R. from providing further protection at crossing of first public highway west of Lake Shore Jct., Ont.

23263. Feb. 8.—Approving agreement between Bell Telephone Co. and Katevale Telephone Co., Jan. 28.

23264. Feb. 9.—Approving location of C. N. Alberta Ry. proposed station and section house at Carrot.

23265. Feb. 9.—Approving Ottawa & New York Ry. bylaw re preparing tariffs of tolls, and rescinding order 13555, May 2, 1911.

23266. Feb. 9.—Approving St. Lawrence & Adirondack Ry. bylaw re preparing and issuing tariffs of tolls, and rescinding order 13815, June 1, 1911.

23267. Feb. 15.—Authorizing Hydro-Electric Power Commission of Ontario to erect wires across C.P.R. track and telegraph wires at Adelaide St., Chatham, Ont.

23268. Feb. 9.—Authorizing clearance at Windsor Sand & Gravel Co.'s siding at Viney, Ont.

23269. Feb. 9.—Approving location of Canadian Northern Ry. freight and passenger shelter at Entwistle, Alta.

23270. Feb. 9.—Ordering C.P.R. to restore train service between Lindsay and Bobcaygeon, Ont., commencing with opening of navigation.

23271. Feb. 11.—Extending, to Apr. 14, time within which Great Northern Ry. shall complete station building at New Westminster, B.C., as required by order 23016, Dec. 14, 1914.

23272. Feb. 10.—Rescinding order 23232, Feb. 2, in so far as it relates to Maine Central Rd. tariff, C.R.C. no. C. 832, effective Feb. 15.

23273. Feb. 10.—Extending, until Sept. 1, time within which Campbellford, Lake Ontario & Western Ry. (C.P.R.) may operate siding across G.T.R. at mileage 89.9, Murray Tp., Ont.

23274. Feb. 11.—Relieving C.P.R. from providing further protection at crossing of public road, Grand Cote Concession, Berthier Parish, Ont.

23275. Feb. 11.—Approving proposed changes in Edmonton, Dunvegan & British Columbia Ry. right of way, to afford sufficient width for station at Morinville, Alta.

23276. Feb. 11.—Authorizing C. N. Ontario Ry. to build bridge across McCarthy Creek, mileage 268.11 west of Ottawa, Gibbons Tp., Nipissing District, Ont.

23277. Feb. 11.—Ordering G.T.R., by June 1, to install improved type of automatic bell at crossing of Concession St., Casselman, Ont.; 20% of cost to be paid out of railway grade crossing fund; G.T.R. to remove section house east of Sealey St., so line of vision when approaching crossing from northwest may not be blocked.

23278. Feb. 8.—Ordering C.P.R., by June 1, to install improved type of automatic bell at crossing of highway in n. w.  $\frac{1}{4}$  Sec. 7-12-23, w. 3 m. Mapot municipality, Sask.

23279. Feb. 5.—Authorizing C. N. Ontario Ry. to build across St. Laurent Road, Cartierville, Que.; and rescinding order 18384, Dec. 23, 1912.

23280. Feb. 10.—Dismissing application of Fort William Board of Trade for order requiring establishment of cartage service at Fort William; or for abolition of railway companies' custom of collecting consignor's cartage from consignees.

23281. Feb. 9.—Dismissing application of Fort William Board of Trade for abolition of charge of 1c. per 100 lbs., minimum \$5 per car, for switching goods for or from steamships between sidings and docks at Fort William.

23282. Feb. 10.—Dismissing application of Fort William Board of Trade for order requiring railway companies to lower all rates from head of lakes to points west by  $2\frac{1}{2}$ c. per 100 lbs., and make tariffs read, "Rates are exclusive of wharfage at Fort William, Port Arthur and West Fort."

23283. Feb. 11.—Authorizing Canadian Northern Ry. to build spur to serve Dominion Government terminal elevator at Saskatoon, Sask.

23284. Feb. 11.—Authorizing Canadian Northern Ry. to build spur near Rosetown, Sask., to connection with C.P.R.; Drumheller Mines to deposit to the Board's credit in a chartered bank at Moose Jaw \$2,500; C.N.R. to refund to Drumheller Mines by way of rebate, \$2 a car, until \$2,500 is repaid.

23285. Feb. 10.—Authorizing St. Jerusalem d'Argenteuil municipality, Que., to build New Monty Road across C.P.R. and C. N. Quebec

Ry. at points as shown on plans on file with the Board; provided brushwood at crossing of C.P.R. is removed.

23286. Feb. 12.—Authorizing C.P.R. to build spur for Crow's Nest Stone Co. in s. e.  $\frac{1}{4}$  Sec. 12-7-2, w. 4 m., and rescinding order 19482, June 6, 1913.

23287. Feb. 12.—Authorizing Alberta Public Works Department to build highway over C.P.R. in n. w.  $\frac{1}{4}$ , Sec. 36-39-23, w. 4 m.; cost of crossing to be paid by C.P.R.

23288. Feb. 15.—Amending order 13993, June 12, 1911, re location of Lachine, Jacques Cartier & Maisonneuve Ry. (G.T.R.), and authorizing L. J. C. & M. Ry. to cross Montreal Tramways Co.'s line overhead, with a clearance of 15 ft., so that use of M. T. Co.'s track will not be interfered with.

23289. Feb. 12.—Authorizing C.P.R. to build road diversion in Sec. 17-8-17, w. 2 m., and build its Weyburn-Stirling Branch across same at mileage 19.61.

23290. Feb. 15.—Authorizing C.P.R. to build extensions to Provincial Reformatory siding, Guelph Tp., Ont.

23291. Feb. 13.—Authorizing C.P.R. to use bridges 24.2, 7.17 and 10.8, Port Burwell Subdivision; 103.25, Hamilton and Goderich Subdivision, and 33.6, Bobcaygeon Subdivision, Ont.

23292. Feb. 15.—Relieving Canadian Northern Ry. from providing further protection at crossing of highway near Elgin, Man.

23293. Feb. 13.—Authorizing G.T.R. to use bridges 278, over Nottawasaga River; 274, near Palgrave station; 265, near Inglewood station; 263a, near Georgetown station, and 262, and Stewarton viaduct, in Ontario.

23294. Feb. 13.—Prohibiting Windsor, Essex and Lake Shore Rapid Ry., until further order, from operating its cars over crossing of Gravel Road, near Windsor, Ont., when gates are down on Michigan Central Rd. crossing.

23295. Feb. 15.—Approving location C.N. Alberta Ry. combined station and section house at Bilby, Alta.

23296. Feb. 15.—Approving plans of Edmonton, Dunvegan and British Columbia Ry. station B.

23297. Feb. 15.—Approving location of G.T. Pacific Branch Lines Co.'s station at Gerrond, Sask.

23298. Feb. 12.—Authorizing C.N. Ontario Ry. to build across and divert Petit Bois Franc Road, Cartierville, C.N.Q.R. to pay to Town of Cartierville \$12,000 as soon as road is legally closed, when all its responsibility shall cease; remainder of cost of diversion to be paid half each by Towns of Cartierville and St. Laurent.

23299. Feb. 15.—Amending order 12321, Nov. 18, 1910, re electric bell installation by C.P.R. at Cote des Niegues Road, Hochelaga County, Que.

23300. Feb. 15.—Extending to May 15, time within which G.T.R. shall install bell at crossing of highway, near Oakville station, Ont., as required by order 23249.

23301. Feb. 18.—Authorizing C.P.R. to build trestle over its main Branch, Toronto, at mileage 2, from Leaside Jct., provided vertical clearance be 22 $\frac{1}{2}$  ft.

23302. Feb. 18.—Relieving Canadian Northern Ry. and G.T. Pacific Ry. from maintaining night signalman at crossing at Camrose, Alta.

23303 to 23305. Feb. 8.—Relieving G.T. Pacific Branch Lines Co. from erecting fences, gates and cattle guards on its Melville-Canora Branch between mileage 0 and 54.72; and on its Moose Jaw Northwest Branch, mileage 0 to 66.6; and on its Regina-Moose Jaw Branch, mileage 0 to 43.3, Sask.

23306. Feb. 18.—Dismissing application of City of London, Ont., for order directing G.T.R. to provide electric bell at crossing of Dundas St.; speed of trains limited to 10 miles an hour.

23307. Feb. 19.—Approving order by Exchequer Court of Canada appointing T. J. Kennedy and V. Harcourt, Receivers of Algoma Central and Hudson Bay Ry. Co.

23308. Feb. 19.—Approving revised location of C.P.R. Swift Current Northwesterly Branch, from Sec. 17-23-29, w.3.m., mileage 111.96, northwesterly to Sec. 24-23-1, w. 4 m., mileage 112.56.

23309. Feb. 19.—Amending order 23274, Feb. 11, re C.P.R. highway crossing in Grand Cote Concession, Berthier Parish, Ont.

23310. Feb. 18.—Relieving C.N. Ontario Ry. and Canada Cement Co., from maintaining night signalman to operate interlocking plant at Belleville, Ont.

23311. Feb. 19.—Relieving Canadian Northern Ry. from providing further protection at crossing south of Mount Albert station, Ont.

23312. Feb. 22.—Authorizing C.P.R. to use bridge 814, Winnipeg Beach Subdivision, Man.

23313. Feb. 19.—Authorizing Erie & Ontario Ry. and Michigan Central Rd. to operate trains over crossing near Attercliffe, Ont., without first stopping.

23314. Feb. 19.—Relieving Canadian Northern Ry. from erecting fences, gates and cattle guards along portions of its line, between North Bay and Port Arthur, Ont.

23315. Feb. 19.—Relieving C.P.R. and Canadian Northern Ry. from maintaining night signalman to operate interlocking plant in Lot 101, St. Paul's Parish, Man.

23316, 23317. Feb. 20, 22.—Authorizing C.P.R. to use bridge 42.2, Drummondville Subdivision, Que., and bridges at Main St., Parkside St., Scotia St., and East Kildonan Road, Kildonan, Man.

23318. Feb. 20.—Authorizing Esquimalt and Nanaimo Ry. to build spur for Weeks Dunnel Cedar Co., Fanny Bay, Vancouver Island, B.C.

23319. Feb. 20.—Approving plan of Smith Patterson Drain under Michigan Central Rd., Brooke Tp., Ont.

23320, 23321. Feb. 22.—Approving location of Edmonton, Dunvegan & British Columbia Ry., through Tp. 78, R. 6 and 10, w. 6 m., Alta., mileage 359.416 to 385, and through Tps. 78 and 79, R. 10 and 13, w. 6 m., Alta., mileage 385 to 410.45.

23322. Feb. 20.—Rescinding orders 16181, Mar. 26, and 17763, Oct. 16, 1912, in so far as they authorize Lachine, Jacques Cartier and Maisonneuve Ry. (G.T.R.) to be built across Iberville and De Fleurimont Sts., Montreal; and authorizing it to cross Iberville St. by bridge 50 ft. wide, carrying highway in straight line over railway, bridge to be so built as to serve De Fleurimont St. as well; dismissing application to divert Comte St.; order 16181 to be amended to provide for bridge, 40 ft. wide, for vehicular and pedestrian traffic only, over Comte St.; rescinding order 16181, in so far as it authorizes level crossing at Poupart St., with leave to applicant to divert Poupart St. along east side of right of way into Comte St., or, at its option, to build bridge carrying said street over railway.

23323. Feb. 22.—Approving Great Northern Express Co.'s resolution authorizing Ronald Stewart, Vice President and General Manager, to prepare tariffs for traffic over its lines in Canada.

23324. Feb. 22.—Dismissing C.P.R. application to remove regular agent at Lavant Station, Ont.

23325. Feb. 22.—Authorizing Canadian Northern Ry. to discontinue its agents at Lavoy, Alta.; Devlin, Ont.; Homewood, Man.; Ridpath, Sask.; Brunkild, Rosebank, Underhill, Man.; St. Gregor, Sask.; Neelin and Warren, Man.

23326. Feb. 22.—Dismissing Canadian Northern Ry. applications to remove agents at Mafeking, St. Laurent, Cardale, Decker, Woodnorth and Fairfax, Man.; Mikado, D'Arcy, Norquay, Beadle, Weldon, Waseca, Pinkham, Willmar and Brooking, Sask.; Minburn, Alta.; and Sleeman, Ont.

23327. Feb. 22.—Authorizing C.P.R. to discontinue agents at Purple Springs, Alta.; Beverly, Sask.; and Tilley, Alta.; caretakers to be appointed.

23328. Feb. 22.—Relieving G.T. Pacific Branch Lines Co. from erecting fences along portions of its Regina-Boundary Branch, mileage 0 to 175, Sask.

23329. Feb. 22.—Approving revised location of C.P.R. Weyburn-Stirling Branch from mileage 316.63 to 358.31, Sec. 25-3-1 to Sec. 12-6-7, w. 4 m., Alta.

23330. Feb. 22.—Rescinding order 15911, Feb. 5 1912, and authorizing C.P.R. to build road diversion in n. e.  $\frac{1}{4}$  Sec. 13-18-17, w. 3 m., Sask.; and build its Swift Current Northwesterly Branch at grade across same at mileage 21.03.

23331. Feb. 22.—Authorizing C.P.R. to discontinue agents at Appin, Brechin and Bethany, Ont.; caretakers to be appointed.

23332. Feb. 23.—Ordering C.P.R. and Western Canada Power Co. jointly to file supplements to C.P.R. Special Joint Tariffs, C.R.C. nos. W-1615 and 1806; also C.R.C. nos. W-1790, 1812 and 2000, being respectively, Transcontinental Freight Bureau's S.R. 1019, 17-A, and 18-B, providing joint rates from Stoltze Mfg. Co.'s mill to destinations shown in said tariffs, via Ruskin, B.C., which shall not exceed rates from Ruskin to same destinations by more than 2c per 100 lbs.; Western Canada Power Co. to receive 3c per 100 lbs. as its proportion, and rescinding order 23213, Jan. 26.

23333. Feb. 23.—Authorizing C.P.R. to build extension to spur for British Sand and Gravel Co., St. Felix de Valois Parish, Que.

23334. Feb. 24.—Approving proposed location C.N. Alberta Ry. combined station and section house at Bliss.

23335. Feb. 23.—Approving proposed location of Canadian Northern Ry. standard freight and passenger shelter at Anerley, Sask.

23336 to 23340. Feb. 24, 23.—Approving proposed location C.N. Alberta Ry. combined stations and section houses at Bedson, Darwall, Obed, Mount Gelkie and Scrivan.

23341 to 23345. Feb. 23.—Authorizing C.P.R. to remove agents at Jeanette, Ont.; Chelsea, Que.; West Montrose, McAlpin, and Grasshill, Ont.

23346. Feb. 22.—Authorizing Canadian Northern Ry. to discontinue agents at Beaver, Man.; Hawick, Alta.; Berton and Ladysmith, Man.; Chandler, Sask.; and Banning, Ont.

23347. Feb. 24.—Authorizing Swift Current Rural Municipality, No. 137, Sask., to build highway over C.P.R. through Sec. 9-15-15, w. 3 m.; after construction, municipality consenting, C.P.R. may close portion of original road allowance north of n. e.  $\frac{1}{4}$  Sec. 9-15-15, w. 3 m., within its right of way.



23348. Feb. 24.—Approving location C.P.R. station at Govenlock, Sask., mileage 307.5, Weyburn-Stirling Branch, station to be C.P.R. standard structural plan A2.

23349. Feb. 24.—Approving proposed location of C.N. Alberta Ry. combined stations and section houses at Brule and Henry House.

23351. Feb. 23.—Approving agreements between Bell Telephone Co. and Sunderland Telephone Co., Stroud Telephone Co., Johnson Tp. municipality, and Tarbutt and Tarbutt Additional Tp. municipality.

23352. Feb. 25.—Approving clearance on C.P.R. at conveyor, to be installed by William Neilson Co., at Beachville, Ont.

23354. Feb. 24.—Relieving G.T.R. from providing further protection at crossing near Rideau Station, Ont.

23355. Feb. 24.—Approving proposed location of Canadian Northern Ry. standard freight and passenger shelters at Surbiton, Sask.

23356. Feb. 25.—Authorizing Western Canada Power Co. to build extension of its line from Stave Falls, B.C., over power house dam to Stave River, about 800 ft. above power house dam.

23357. Feb. 25.—Authorizing G.T.R. to use bridge 15 across Welland Canal, between St. Catharines and Port Dalhousie, Ont.

23359. Feb. 26.—Relieving Canadian Northern Ry. and G.T.R. from maintaining night signalman near Washago, Ont.

23360. Feb. 26.—Ordering C.P.R. fencing of portion of right of way, between mileage 58.6 and 103.6, Thompson Subdivision, and mileages 0.2 and 39.75, Cascade Subdivision, B.C.; be commenced by Apr. 1 and completed within 30 days.

23361. Feb. 26.—Extending to Dec. 31 time within which C.P.R. shall equip cabooses with marker sockets in lower position, as required by general order 127, July 6, 1914.

23362. Feb. 25.—Approving agreement between Bell Telephone Co. and Village of Blyth, Ont., Feb. 19.

23363. Feb. 27.—Approving revision in Edmonton, Dunvegan and British Columbia Ry. through Sec. 28-56-55, w. 4 m., mileage 29.

23364. Feb. 27.—Approving Bell Telephone Co. agreement with Laird Tp., Ont., and rescinding order 9653, Feb. 21, 1910.

23365. Feb. 26.—Authorizing G.T.R. to use bridge, mileage 330.11, over Carlaw Ave., Toronto.

23366. Feb. 26.—Authorizing G.T.R. to suspend operation of half-interlocking plant for 8 weeks from date pending completion of repairs required at crossing of London St. Ry., on Dundas St. London, Ont.

23367. Feb. 27.—Authorizing C.P.R. to use bridge 52.3, near Ardendale, Ont.

23368. Mar. 1.—Approving Bell Telephone Co. agreement with Tarentorus Telephone Co., Feb. 19, and rescinding order 12251, Nov. 11, 1910.

23369. Feb. 27.—Authorizing City of Lachine, Que., to build foot subway under G.T.R., at intersection of 6th Ave. and 7th Ave.

23370. Mar. 3.—Dismissing complaint of Quebec and St. Maurice Industrial Co., Berlin, N.H., against discontinuance by Quebec and Lake St. John Ry. of through train service between La Tuque and Rivière a Pierre Jet., Que.

23371. Feb. 27.—Amending order 22845, Nov. 7, 1914, re farm crossing of Dominion Atlantic Ry. at Deep Brook, N.S.

23372. Mar. 3.—Approving location of C.P.R. station at Robsart, Sask.

23373. Feb. 27.—Relieving C.N. Ontario Ry. and C.P.R. from maintaining night signalman at crossing near Hurdman's Bridge, Nepean Tp., Ont.

23374. Feb. 27.—Relieving C.N. Ontario Ry. and C.P.R. from maintaining night signalman at Tweed, Ont.

23375. Feb. 26.—Ordering G.T.R. and Canadian Northern Ry. jointly to publish and file tariff of joint rates to apply on coal in carloads, minimum of 15 gross tons, shipped from Prescott, Ont., to all points on the portion of C.N.R. formerly known as Brockville, Westport and Northwestern Ry., via Lyn; G.T.R. proportion of rates to be 56c a gross ton, including switching from Ogdensburg ferry dock; C.N.R. proportion thereof to be less than its local mileage rates on coal by amounts corresponding to reduction made by G.T.R. from its local mileage rate, having regard to mileage in each case.

23376. Mar. 2.—Ordering City of Fort William, Ont., to pave and drain subway where C.P.R. crosses Syndicate Ave., work to be completed by Aug. 1.

23377. Mar. 5.—Ordering G.T. Pacific Ry. to carry freight to and from St. Louis, Sask.; to supply freight box car at point convenient to public highway leading to St. Louis, to be used as receptacle for less than carload freight; such service to be inaugurated forthwith.

23378. Mar. 4.—Extending to Aug. 1, time within which Campbellford, Lake Ontario and Western Ry. (C.P.R.) may use crossing by its ballast pit spur under Canadian Northern Ry. in e. ¼ Lot 12, Con. 4, Scarborough Tp.

23379, 23380. Mar. 5.—Approving plan and specifications of improvement to Gernhelder

drain under C.P.R. Guelph and Goderich Branch on Lots 33 and 34, Con. 17, Elma Tp., Ont.

23381. Mar. 4.—Authorizing C.P.R. to remove agent from Hawk Lake, Ont.

23382. Mar. 3.—Authorizing Hamilton Cataract Power, Light and Traction Co. to erect transmission line across G.T.R. on Lot 34, Con. 1, Saltfleet Tp., Ont.

23383. Mar. 5.—Extending to Apr. 15 time within which Great Northern Ry. shall install bell at crossing of Front St., near intersection of Columbia St., New Westminster, B.C.

23384. Mar. 5.—Authorizing C.N. Ontario Ry. to build across public road between Lots 230 and 232, St. Eustache Parish, and rescinding order 13061, Feb. 20, 1911.

23385. Mar. 5.—Relieving C.P.R. from providing further protection at crossing of Dundas Road, mileage 7, Lambton, Ont.

23386. Mar. 4.—Authorizing C.P.R. to build extensions to sidings of Cataract Jct. Sand and Gravel Co. in Lot 4, Con. 3, Caledon Tp., Ont.

23387, 23388. Mar. 4, 5.—Authorizing C.P.R. to make alterations to spurs for Laidlaw Lumber Co., Guelph, Ont., and Godson Contracting Co., Darlington Tp., Ont.

23389. Mar. 2.—Authorizing C.N. Ontario Ry. to build across Monkland Boulevard, Cartierville, Que.

23390. Mar. 2.—Authorizing C.N. Quebec Ry. to build sidings across Stadacona and Marlboro Sts., Montreal.

23391. Mar. 4.—Suspending, pending Board's decision in general application of railway companies operating in Eastern Canada for increased freight rates, Supplement 6 to C.P.R. Tariff, C.R.C. no. E-2919, in so far as it proposes to cancel Item 136.

23392. Mar. 4.—Ordering C.P.R. to accept shipments of such perishable freight as beer, fruit and vegetables, for carriage in heated cars to stations on such days of each week as are duly announced by company, subject to conditions, that shipper sign release waiving all claim for damages by frost, unless shown heating appliances were in fact missing, or heaters were allowed to fail of their purpose as a result of negligence of C.P.R. employees; damages recoverable against company limited to half freight tolls charged; order to apply only to shipments of Fernie-Fort Steele Brewing Co., and Elk Valley Brewing Co., and any others who may apply for same service on C.P.R. west of Port Arthur, during winter of 1915-1916.

23393. Mar. 4.—Relieving C.P.R. and C.N. Ontario Ry. from maintaining night signalman at Brechin, Ont.

23394. Mar. 5.—Authorizing C.P.R. to use bridge over Westminster Road, Lethbridge, Alta.

23395. Mar. 8.—Authorizing C.P.R. to build extension to siding for I. Desormeau, St. Martin Parish, Que.

23396. Mar. 8.—Approving change in location of C.P.R. Swift Current Northwesterly Branch from mileage 6.61 to 7.52, n.e. ¼ Sec. 17, and s.e. ¼ Sec. 20-37-11, w. 4 m., Alta.

23397. Mar. 9.—Amending order 23375, Feb. 26, re G.T.R. and Canadian Northern Ry. tariffs relating to case shipments from Prescott, Ont.

23398. Mar. 8.—Ordering C.P.R. to build and divert highway between Secs. 22 and 23-21-12, w. 2 m., west of Balcarres, Sask.

23399. Mar. 9.—Relieving G.T.R. from providing further protection at crossing near Brampton, Ont.

23400. Mar. 9.—Rescinding order 14446, July 31, 1911, re C.P.R. road diversion along south boundary of Sec. 27-32-17, w. 2 m., Sask.

23401. Mar. 8.—Ordering International Bridge and Terminal Co. to appoint day and night watchmen to protect crossing of Church St., Fort Frances, Ont., pending rearrangement of tracks.

23402. Mar. 10.—Approving C.P.R. clearances at tie loading platform and loading jack on siding at mileage 79.37, Sudbury Subdivision, Mowat Tp., Ont.

23403. Mar. 10.—Approving location of C.N. Alberta Ry. combined station and section house, n.w. ¼ Sec. 19-53-15, w. 5 m.

23404. Feb. 8.—Amending order 21753, May 2, 1914, re highway crossing by G.T.R. at Stoney Creek, Ont.

23405. Mar. 12.—Approving location of C.N. Alberta Ry. combined station and section house at Marlboro.

23406. Mar. 12.—Authorizing C.P.R. to build highway over its right of way on regular road allowance east of Sec. 21-12-28, w. 3 m., Sask.

23407. Mar. 12.—Rescinding order 23294, Feb. 12, and ordering Windsor, Essex and Lake Shore Rapid Ry. flag its cars over crossing at Gravel Road near Windsor, Ont., when gates are down on M.C.R. crossing.

23408. Mar. 11.—Ordering Esquimalt and Nanaimo Ry. to build highway crossing at Waterloo, near mileage 64, Bright and Cranberry Districts, B.C.; cost to be paid by British Columbia Public Works Department.

23409. Mar. 11.—Authorizing Niagara, St. Catharines and Toronto Ry. to build spur for W. A. Griffiths, Lot 7, Con. 1, Grantham Tp., Ont.

23410. Mar. 11.—Authorizing C.P.R. to divert road allowance between Secs. 12 and 13, and between Secs. 11 and 12-41-26, w. 3 m., Sask.

23411. Mar. 15.—Approving revised location G.T. Pacific Branch Lines Co., Cutknife Branch, in s. ½ Sec. 29-44-22, w. 3 m., Sask.

23412. Mar. 11.—Authorizing C.P.R., pending further order, to remove regular agent at Vermillion Bay station, Ont., and to appoint caretaker.

23413. Mar. 15.—Ordering C.P.R. to install improved type of automatic bell at crossing at Martinon station, N.B.; 20% of cost to be paid out of railway grade crossing fund.

23414. Mar. 13.—Approving agreement between Bell Telephone Co. and West Garafraxa Telephone Co-operative Association, Ltd., Feb. 19.

23415. Mar. 12.—Ordering C.P.R. to build farm crossing over its Stobie Branch on Lot 4, Con. 5, McKim Tp., Ont.; 300 ft. north of south boundary of R. A. Waite's property; cost to be paid by R. A. Waite; work to be completed by Apr. 1.

23416. Mar. 12.—Dismissing Esquimalt and Nanaimo Ry.'s application to remove its regular station agent at Cowichan, B.C.

23417. Mar. 16.—Authorizing C.P.R. to build spur for Canada Ingot Iron Culvert Co., Calgary, Alta.

23418. Mar. 16.—Relieving C.N. Ontario and G.T.R. from providing signalman at crossing of G.T.R. spur to Edwards' Mill, Rockland, Ont.

23419. Mar. 16.—Amending order 23353, Feb. 25, re C.P.R. clearances at Beachville, Ont.

23420. Mar. 18.—Relieving Brantford and Hamilton Electric Ry. from providing further protection at highway near Ancaster station, Ont.

23421. Mar. 16.—Approving revised location of G.T. Pacific Branch Lines Co.'s Moosejaw Northwest Branch through n.e. ¼ Sec. 19-18-28, w. 2 m., Sask.

23422. Mar. 16.—Ordering C.P.R. to install, by June 1, improved type of automatic bell at main highway crossing between Ketepec and Acamac, N.B.; 20% of cost to be paid out of the railway grade crossing fund.

23423. Mar. 17.—Authorizing Kettle Valley Ry. to build bridge 20.3 over Twenty Mile Creek, Coquihalla Section, B.C.

23424. Mar. 20.—Authorizing Campbellford, Lake Ontario and Western Ry. (C.P.R.) and G.T.R. to operate trains over crossings at mileage 119.90, 119.91 and 120.02, Cobourg, Ont., without stopping, and rescinding order 23111, Jan. 11.

23425. Mar. 20.—Authorizing Glengarry and Stormont Ry. (C.P.R.) and G.T.R. to operate trains over crossing near Cornwall, Ont., without stopping.

23426. Mar. 20.—Ordering C.N. Ontario Ry. to restore certain passenger train service from Trenton to Bancroft and Maynooth.

23427. Mar. 17.—Authorizing C.N. Ontario Ry. to operate two spurs for Haight & Dickson Lumber Co., Capreol Tp., Ont.

23428. Mar. 16.—Approving location C.N. Alberta Ry. second class station at Tollerton.

23429. Mar. 16.—Approving location of Canadian Northern Ry. third class station at Forgan, Sask.

23430. Mar. 17.—Approving clearances of C.P.R. new standard three car stockyard and loading chute.

23431. Feb. 23.—Ordering C.P.R. to appoint agent at Mozart station, Sask., during grain shipping season.

23432 and 23433. Mar. 22.—Authorizing C.P.R. to use bridge 62.8 over Magnetawan River, near Byng Inlet, Ont., and bridge 18.1, Moosejaw Subdivision, Sask.

**F. P. Gutelius, M. Can. Soc. C.E.**, who was appointed General Manager, Canadian Government Railways, Moncton, N.B., Mar., 1912, became a British subject Feb. 23, 1912, the naturalization certificate being granted by a judge of the Circuit Court of Montreal on that date. This information was given in the House of Commons recently by the Secretary of State in reply to the member for Temiscouata.

**A Quebec Court** has decided in the case of Couture against the G.T.R., that the company is responsible for accidents to employees, when it does not enforce its safety rules. Couture met with an accident when coupling cars which were in motion. The company pleaded contributory negligence, and the plaintiff retorted that the regulation against coupling cars while in motion was not enforced by the company.

**National Transcontinental Ry. Temporary Service.**—Senator Loughheed stated in the Senate, Mar. 16, that the Government is paying at the rate of \$5.35 a mile for the weekly train service on the N.T.R. west of Cochrane, Ont.



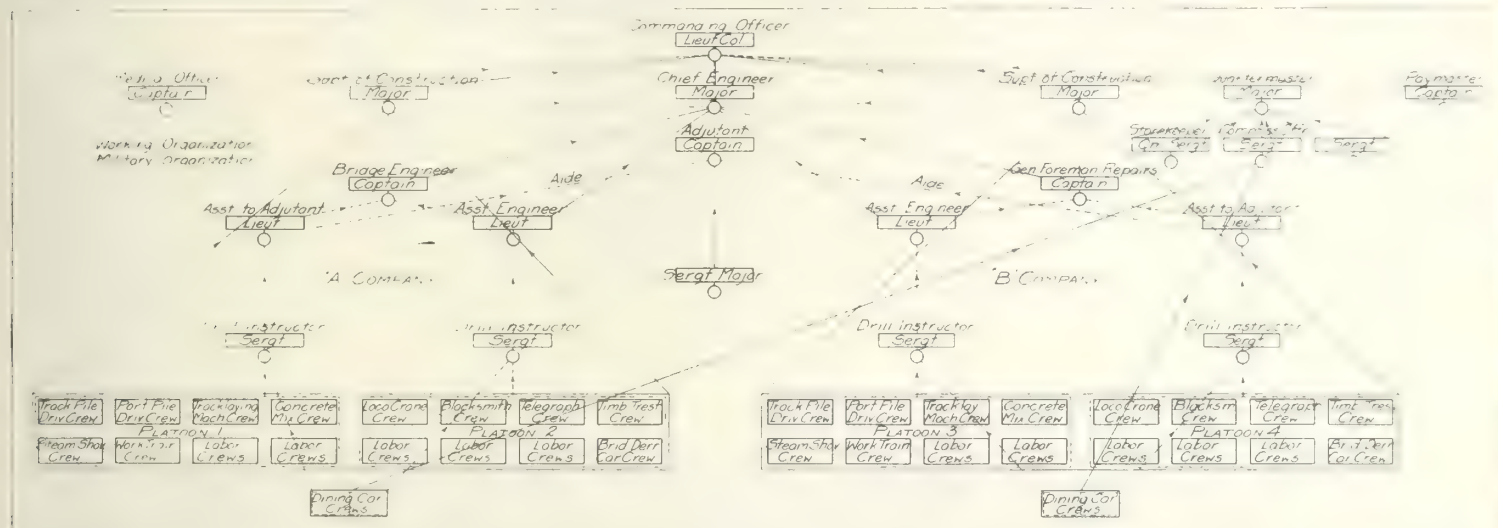
# Organization of Canadian Overseas Railway Construction Corps.

The British War Office asked the Dominion Government recently to arrange for the recruiting in Canada of a force of a little over 500 men for railway repair and reconstruction work in Europe during the continuance of the war. At the request of the Dominion Government the C.P.R. management, through the President, Sir Thos. G. Shaughnessy, undertook the organization of such a corps and to name the officers and select the men. The organiza-

will rank as captain; a paymaster, who will rank as captain, and a medical officer, who will rank as captain.

The corps will be divided into two companies, A and B, each under the command of a major, who will be superintendent of construction, with a captain as a second in command, the captain of A company being bridge engineer, and the captain of B company being general foreman of repairs. Each company will be divided into two pla-

commander. For working purposes each company will be directly under the command of the company major, who, as above stated, will be superintendent of construction. The right platoon of each company will consist of a locomotive crane crew, blacksmith crew, telegraph crew, timber trestle crew, bridge derrick car crew and three labor crews. The left platoon will consist of track pile driver crew, portable pile driver crew, track laying machine crew, concrete mixing crew, steam shovel crew, work train crew and two labor crews. Each company will have a dining car crew.



Organization Chart, Canadian Overseas Railway Construction Corps.

tion is in progress under C. W. P. Ramsey, Engineer of Construction, Eastern Lines, C. P.R., Montreal, who has been granted extended leave of absence and who will rank as lieutenant colonel in command.

The force, which is to be mobilized at St. John, N.B., will have a regimental staff comprising the commanding officer, who will rank as lieutenant colonel; a chief engineer, who will rank as major; a quartermaster, who will rank as major; an adjutant, who

toons under the command of a lieutenant, one of whom in each company will be assistant engineer and the other assistant to the adjutant. The strength of each company outside of the officers will be 252 men. The organization is shown in the accompanying chart. Each company will be identical in its makeup. Under each platoon commander there will be a sergeant drill instructor, who will provide for the military instruction under the supervision of the platoon

The C.P.R. has given official notice that the 507 skilled railway constructors to be enlisted will be apportioned as shown in the accompanying table. In addition to the regular rates of pay named in the table, certain working allowances will be made for the various classes of skilled men in accordance with position and ability. Complete information can be obtained at 143 St. Antoine street, Montreal, and at the headquarters of the C.P.R. general superintendents at St. John, N.B., Toronto, North Bay, Winnipeg, Moose Jaw, Calgary, and Vancouver. Recruiting will not be confined to men in C.P.R. service.

Position.	Rank.	No	Regimental pay per day	Field allowance if married per day, per month.	Separation allowance if married per day, per month.
Bridge engineer	Captain	1	\$3 00	75 cts.	\$40
Mechanical engineer	"	1	3 00	75 "	40
Assistant engineer	"	2	2 00	60 "	30
Instrumentman	"	2	2 00	60 "	30
Foreman	"	2	2 00	60 "	30
Chief clerk	Sergeant	1	1 60	20 "	25
Drill instructor	Sergeant major	1	2 00	30 "	30
Storekeeper	Quarter mas. sergt.	2	1 80	20 "	25
Track foreman	Sergeant	2	1 35	15 "	25
Trestle foreman	"	2	1 35	15 "	25
Steel bridge foreman	"	2	1 35	15 "	25
Grade foreman	"	2	1 35	15 "	25
Trainmaster	Corporal	2	1 10	10 "	20
Masonry foreman	"	2	1 10	10 "	20
Telegraph foreman	"	2	1 10	10 "	20
Rock foreman	"	2	1 10	10 "	20
Track foreman	"	1	1 10	10 "	20
Grade foreman	"	2	1 10	10 "	20
Trestle foreman	"	2	1 10	10 "	20
Steel bridge foreman	"	2	1 10	10 "	20
Shovel runner	"	4	1 10	10 "	20
Conductor	"	4	1 10	10 "	20
Firemen	"	4	1 10	10 "	20
Master mechanic	"	2	1 10	10 "	20
Clerk	"	4	1 10	10 "	20
Cook	"	2	1 10	10 "	20
Locomotive engineer	Sapper	4	1 00	10 "	20
Teamster	"	4	1 00	10 "	20
Holstman	"	12	1 00	10 "	20
Blacksmith	"	4	1 00	10 "	20
Fireman	"	8	1 00	10 "	20
Mechanics	"	8	1 00	10 "	20
Fireman	"	12	1 00	10 "	20
Blacksmith	"	8	1 00	10 "	20
Cook	"	18	1 00	10 "	20
Clerk	"	6	1 00	10 "	20
Radman	"	2	1 00	10 "	20
Chainman	"	4	1 00	10 "	20
Carman	"	70	1 00	10 "	20
Bridgeman	"	30	1 00	10 "	20
Teamster	"	38	1 00	10 "	20
Track and grademan	"	200	1 00	10 "	20
Batman	"	14	1 00	10 "	20
Bugler	"	2	1 00	10 "	20
Drummer	"	2	1 00	10 "	20

**Alberta Expenditure on Railways.**—The Minister of Railways for Alberta informed the Legislature, Mar. 8, that in respect of the various lines for the building of which the Province had guaranteed bonds, \$33,692,541 had been realized on the securities issued, the total bonds authorized to be issued being \$40,600,450. Out of the proceeds of these bonds \$20,318,972 had been paid out to the several companies, viz., Canadian Northern Ry., \$7,389,548; Canadian North Western Ry., \$2,730,614; Grand Trunk Pacific Ry., \$3,293,067; Edmonton, Dunvegan and British Columbia Ry., \$4,902,740; Alberta and Great Waterways Ry., \$1,886,280; Lacombe and Blindman Valley Ry., \$116,623.

**Free Right of Way for Railways.**—By an order in council, dated Mar. 6, the provisions of the order in council of July 15, 1886, under which the Minister of the Interior may grant free right of way to railway companies in Manitoba, Saskatchewan and Alberta, are extended so that the Minister may grant right of way to railways incorporated by the legislatures of either of the three provinces, but which have been taken over by companies holding Dominion charters. The order is made retroactive, so as to cover the past practice of the department, such rights of way having been invariably granted.



## Suburban Type Locomotives, Grand Trunk Railway.

Six suburban type locomotives, one of which is shown in the accompanying illustration, have been delivered recently to the G.T.R. by the Montreal Locomotive Works. They have been put in service between Montreal and Vaudreuil, 24 miles, and between Montreal and St. Hyacinthe, 37 miles. Where this kind of traffic is frequent, the suburban type locomotive can be used to good advantage, for delays caused by turning are eliminated, as the suburban type can run in either direction equally well.

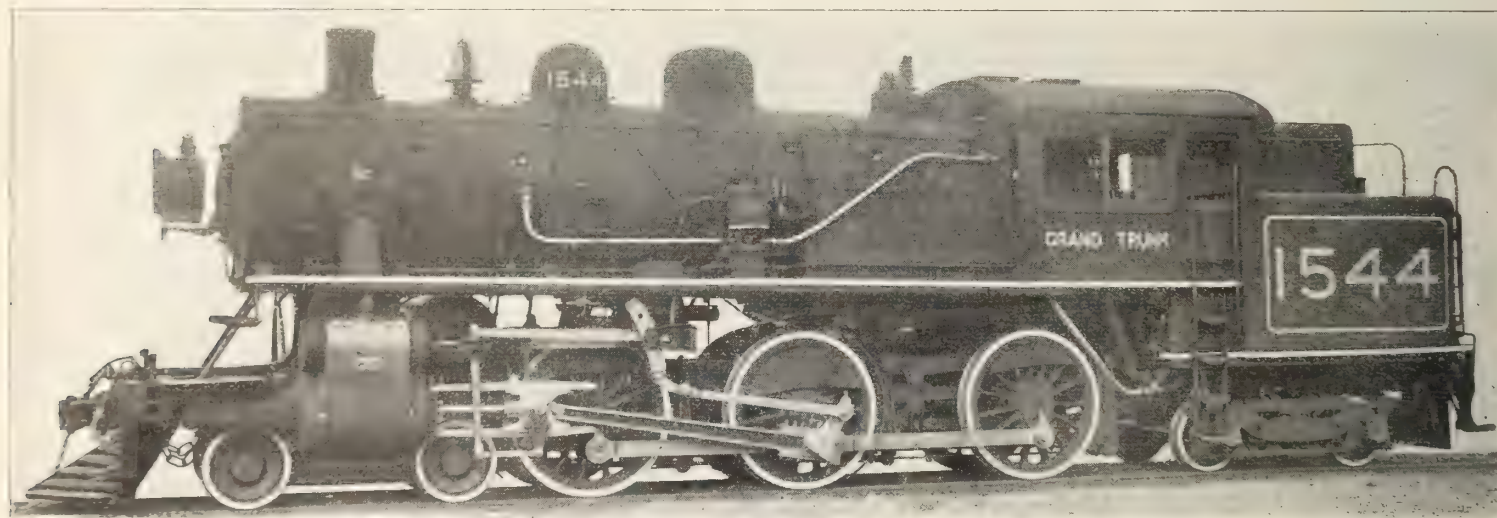
This traffic on the G.T.R. was formerly handled by 4-4-2 suburban type locomotives having 17 x 22 in. cylinders and a total weight of 128,600 lbs. As this traffic increased 20 x 26 in. moguls and ten wheelers were also used. New steel suburban cars, which weigh 138,000 lbs. as compared with 75,000 lbs. for the older class of car, have also been placed in service recently. As it was also desired to increase the number of cars in a train, it became necessary to design a more powerful locomotive. Former experience with the traffic and the differ-

Tank, capacity water ..... 3,500 U.S. gals.  
Tank, capacity coal ..... 5 tons.

The design in general follows the standards of the builders. An interesting feature is the combination of the Gaines combustion chamber and a Security brick arch. This combination is claimed to secure a very complete deflection of the gases, whereby better combustion is obtained; the back end of the firebox is more fully utilized, with a resulting increase in the generation of steam; and the amount of smoke is reduced to a minimum, which is so important in this kind of service. The front truck is equalized with the drivers, as it was not desired to have more than two systems of equalization. Other features are a Schmidt superheater, outside steam pipes, self centring valve stem guide, extended piston rod, the improved throttle lever bracket, which has also been applied on the mikados for this road, which were described in Canadian Railway and Marine World, Aug., 1913, long main driving box, and vanadium steel main frames.

line to Jan. 31 was \$9,768,869.23, of which \$1,009,063.15 was expended in 1912-13; \$4,498,717.25 in 1913-14, and \$4,261,088.83 to Jan. 31, 1915. It was stated in the House of Commons in answer to further questions, Mar. 4, that the total expenditure in connection with the project during 1914 had been \$4,188,379.17, of which \$2,344,891.57 had been expended on the railway proper, and \$1,843,987.60 on the Port Nelson terminals and harbor. The Marine Department expended \$45,676.77 on the project during the same period. \$40,164.98 was expended in surveying Hudson Bay and Strait between April 1 and Dec 31, 1914. (Mar., pg. 94.)

**Canadian Society of Civil Engineers.**—Ottawa branch.—An address on Railway Construction and the Public, was given by H. A. Powell, K.C., of St. John, N. B., before the Ottawa branch of the Canadian Society of Civil Engineers, Mar. 4. He contended that more than half of the money used in the construction of railways in Canada had been spent in providing lines that were unnecessary, and that a considerable portion of the amount had been expended upon the building of railways which had proved to be



Suburban Type Locomotive for Montreal Suburban Lines, Grand Trunk Railway.

ent types of locomotives used, influenced the G.T.R. officials in deciding on the suburban type for the new power. The new locomotives are handling an average train of 7 cars, whereas trains of 5 cars were the average with the former power. Following are the principal particulars:—

Traction power .....	30,940 lbs.
Factor of adhesion .....	4.7
Wheel base, driving and rigid .....	15 ft. 8 ins.
Wheel base, total .....	38 ft. 11 ins.
Weight, working order .....	262,000 lbs.
Weight, on drivers .....	146,000 lbs.
Weight, on trailers .....	67,000 lbs.
Weight, on engine truck .....	49,000 lbs.
Boiler, type .....	Straight top, radial stay.
Boiler, o.d. first ring .....	71 9-16 ins.
Boiler, pressure .....	200 lbs.
Firebox, type .....	Wide.
Firebox, length and width .....	129 x 75 1/4 in.
Crown staying, type .....	Radial.
Tubes, material .....	Cold drawn seamless steel.
Tubes, number and size .....	191 2 in.
Flues, material .....	Cold drawn seamless steel.
Flues, number and size .....	26 5 3-8 in.
Heating surface, tubes and flues .....	1,604 sq. ft.
Heating surface, firebox .....	173 sq. ft.
Heating surface, arch tubes .....	31 sq. ft.
Heating surface, total .....	1,808 sq. ft.
Superheater surface .....	347 sq. ft.
Grate area .....	47 sq. ft.
Wheels, engine truck .....	30 1/2 in. solid steel.
Wheels, driving .....	63 in. cast steel.
Wheels, trailing .....	31 in. solid steel.
Journals, driving, main and others .....	
Journals, engine truck .....	9 1/2 x 20 and 9 1/2 x 12 in.
Journals, trailing truck .....	6 1/2 x 10 1/2 in.
Journals, trailing truck .....	6 x 11 in.
Cylinders, size .....	21 x 26 in.
Valves, type .....	Piston.
Tank, type .....	Water bottom.

## Dominion Government Railway to Hudson Bay.

A press dispatch from Pas, Man., Mar. 8, says the frost is rapidly leaving the ground in the country through which the line passes, and an early start on construction is expected. The right of way has been cleared to within 40 miles of Port Nelson. The steel work for the bridge across Manitou Rapids is being taken in. It is expected that 3,000 men will be at work by the end of April along the route, and that the grading will be completed to Port Nelson by the next winter.

A press telegram from Pas, Man., credits J. W. Porter, Chief Engineer, with stating that the contract for the steel cantilever bridge across the Nelson River at Manitou Rapids has been let to Canadian Bridge Co., Walkerville, Ont.

Replying to questions in the House of Commons recently the Minister of Railways said the roadbed is completed and fully ballasted to mile 56, and is partially ballasted to mile 175. Track has been laid on 214 miles of the grading. It is expected that the line will be completed by the autumn of 1917, by which time it is expected also that it will be possible to ship grain from Port Nelson. It will require a couple of year further work on the terminals before they will be completed. The total expenditure on the

actually injurious to the trade of the country. The question was whether it was advisable to go ahead with railway construction slowly and economically or rapidly and extravagantly. He claimed that the system prevailing since Confederation had favored the latter, and advocated the formation of a new railway board, independent of political and other considerations, to report on applications for railway charters and subsidies.

**Rogers Pass Tunnel Suit.**—The action brought by J. McIlwee and Sons, Denver, Col., against Foley, Welch and Stewart, for damages on account of breach of contract, was terminated at Vancouver, B.C., Mar. 3, when judgment was given for the plaintiffs for \$31,000, with costs, which are estimated at \$30,000. The plaintiffs had a sub-contract from Foley, Welch and Stewart for boring the pioneer tunnel at Rogers Pass, on the C.P.R. After considerable work had been done and certain premiums were alleged to have been earned, disputes arose, as a result of which the contract was terminated and the McIlwee firm entered suit for breaches of contract, claiming over \$500,000 as damages, etc. The court sat for 16 days hearing evidence, most of which was of a highly technical character. In fixing the damages at \$31,000 the court held that the plaintiffs should have gone back to work when they were offered a chance to do so after the first dispute.



## Railway Statistics for Year Ended June 30th, 1914.

The following abstract of the railway statistics for the year ended June 30, 1914, as compiled in the Railways Department at Ottawa, has been prepared by the Comptroller of Statistics, J. L. Payne:—

**Operating mileage** was increased by 1,491 miles during the year, bringing the total up to 30,795. By ten year periods the growth of railway mileage has been as follows—

1864 .....	2,189	1894 .....	15,627
1874 .....	4,331	1904 .....	19,431
1884 .....	10,273	1914 .....	30,795

By provinces, the following was the mileage on June 30, 1914, and the increases over June 30, 1913:—

	Miles.	Increase.
Nova Scotia .....	1,365	5
Prince Edward Island .....	279	
New Brunswick .....	1,839	295
Quebec .....	4,044	57
Ontario .....	9,255	255
Manitoba .....	4,075	82
Saskatchewan .....	5,089	438
Alberta .....	2,545	332
British Columbia .....	1,978	28
Yukon .....	102	
In the United States .....	223	
<b>Total</b> .....	<b>30,794</b>	<b>1,492</b>

The mileage in the United States relates entirely to Canadian lines which, for geographical reasons, pass over U.S. territory in forming a continuous system between points in Canada.

By official inquiry it was ascertained that on June 30, 1914, there were 22,891 miles of railway under construction, as follows:—

	Surveyed.
Manitoba .....	354.00
British Columbia .....	3,577.69
Quebec .....	439.00
Ontario .....	531.84
New Brunswick .....	57.00
Saskatchewan .....	3,458.00
Alberta .....	3,054.47
Nova Scotia .....	
<b>Total</b> .....	<b>11,472.00</b>

309 miles of second, or double, track were laid in 1914, bringing the total up to 2,293 miles. Combining single, double and yard track and sidings there was a total of 40,605 miles.

**Capitalization.**—The capital liability of operative railways stood at \$1,808,820,761 on June 30, 1914—an increment of \$276,990,069 for the year. This capitalization was divided as follows:—Stocks, \$853,110,653; debenture stock (C.P.R.), \$173,307,470; funded debt, \$782,402,636. Stocks increased by \$107,844,383 during the year, and bonds by \$169,145,686. There were also outstanding on June 30, 1914, \$64,637,500 of stocks and \$88,669,809 of bonds attached to railways under construction, making the final aggregate of capitalization \$1,962,128,070. Dividends on stocks in 1914 amounted to \$30,434,601. The interest charges on bonds were met in full.

**Aid to Railways.**—Cash aid to railways in 1914 reached a total of \$16,106,319, of which the Dominion contributed \$15,583,059. These payments brought the account up to the following position:—

By the Dominion .....	\$178,824,529
By the provinces .....	37,023,275
By municipalities .....	17,914,836
<b>Total</b> .....	<b>\$233,772,640</b>

Land grants up to June 30, 1914, were as follows:—

	Acres.
By the Dominion .....	31,864,074
Province of Ontario .....	1,198,650
British Columbia .....	8,119,221
New Brunswick .....	1,647,772
Nova Scotia .....	160,000
Ontario .....	624,232
<b>Total</b> .....	<b>43,613,949</b>

The account with respect to guarantees stood as follows on June 30, 1914:—

Dominion .....	
Manitoba .....	
Alberta .....	
Saskatchewan .....	
New Brunswick .....	
Ontario .....	
Quebec .....	
British Columbia .....	
<b>Total</b> .....	

Included with the guarantees authorized is \$33,116,000 of Grand Trunk Pacific bonds which the Dominion Government purchased in order to prevent the application of the implement clause of the agreement with that company.

**Public Service of Railways.**—For the statistical year 1913-1914, the railways of Canada carried 46,702,280 passengers and 101,393,989 tons of freight. As compared with 1913 there was an increase of 471,515 in the number of passengers carried, and a decrease of 5,598,721 in the number of tons of freight hauled. The growth of freight traffic is shown in the following statement:—

	Tons.		Tons.
1884 .....	13,712,269	1904 .....	48,097,519
1894 .....	20,721,116	1914 .....	101,393,989

The number of passengers carried one mile was 3,089,031,194, against 3,265,656,080

Under Contract.	Completed.	In Operation.	Total.
108.33	133.85	102.70	698.88
1,234.98	698.08	598.20	6,108.95
945.63	43.29	1.70	1,429.62
1,841.06	835.71	465.20	3,673.81
167.55			224.55
340.37	555.40	587.19	4,940.96
804.95	1,188.93	688.23	5,736.58
78.02			78.02
<b>5,520.89</b>	<b>3,417.26</b>	<b>2,443.22</b>	<b>22,891.37</b>

in 1912-1913. Per mile of line the number of passengers carried was 1,516—a decrease of 60 as compared with 1912-1913. The average receipts per passenger per mile were 2.007 cents. The average of ticket sales was \$1.328 per passenger. There was an average of 59 passengers per train, against 62 in 1912-1913. The average journey was 66 miles. The average number of passenger cars per passenger train was 4.2. There was an average of 14 passengers per car.

The number of tons of freight hauled one mile was 22,063,294,685, and the average receipts per ton per mile were .742 cent. The average number of tons per freight train was 353—a betterment of 11 tons over 1912-1913, and of 75 tons over 1908-1909. There was an average of 18.4 loaded cars per train, with an average of 19.18 tons per car. The average freight haul was 217 miles, which was the longest of any country in the world. The average revenue per ton was \$1.614, against \$1.636 in 1912-1913. The division of freight traffic in 1914 by classes was as follows:—

	Tons.	Per Cent.
Products of Agriculture ..	18,370,480	18.11
" Animals .....	3,433,500	3.29
" Mines .....	38,260,170	37.73
" the Forest .....	16,012,097	15.79
Manufactures .....	16,834,126	16.62
Merchandise .....	5,113,603	5.43
Miscellaneous .....	3,397,697	3.03

From the United States railways 23,553,833 tons were received, or 22% of the total.

**Earnings and Operating Expenses.**—Gross earnings aggregated \$243,083,539, or \$13,619,164 less than in 1912-1913. The decline was equal to 5.6%. This decrease followed

a long period of advances, as the following statement shows:—

1884 .....	\$33,421,705	1904 .....	\$100,219,436
1894 .....	49,552,528	1914 .....	243,083,539

Operating expenses amounted to \$178,975,-

Authorized.	Executed.	Earned.
\$188,965,063	\$127,965,063	\$127,965,063
25,221,580	25,221,580	24,589,067
55,810,450	40,200,450	17,561,778
41,625,000	21,651,459	21,651,459
6,063,000	6,063,000	4,806,965
7,860,000	7,860,000	7,860,000
392,000	392,000	392,000
80,322,072	39,357,072	30,647,072
<b>\$406,259,165</b>	<b>\$268,710,264</b>	<b>\$235,473,354</b>

259, or 73.63% of gross earnings. There was a decrease of \$3,036,431 as against 1912-1913. The difference between gross earnings and operating expenses was \$64,108,280, which was \$10,582,733 less than in 1912-1913. The sources of gross earnings in 1914 were as follows:—

Passengers .....	\$ 62,012,296
Mails .....	2,500,176
Express .....	6,444,214
Baggage, parlor cars, etc. ....	1,607,517
Freight .....	165,753,731
Station and train privileges .....	1,044,737
Telegraphs, rents, etc. ....	3,720,868

The railways also had gross earnings of \$23,882,142 from outside operations, to which operating expenses of \$19,784,804 attached. Per mile of line gross earnings were equal to \$7,893.60—a loss of \$856.90 as compared with 1913. In this connection it should be remembered that during the past three years 5,395 miles of new line have been put into operation, and new mileage does not yield the same volume of traffic as does established mileage. Operating expenses were equal to \$5,811.83 per mile of line. Per train mile, all trains, earnings were equal to \$2.253, and the cost of operation was \$1.659. Per ton, freight earnings were equal to an average of \$1.614. An analysis of operating expenses shows that there was a high ratio of expenditure on the upkeep of roadbed and equipment. This has been a satisfactory feature of railway development in Canada for a number of years past.

**Equipment.**—The additions to equipment in 1914 were: Locomotives, 328; cars in passenger service, 306; cars in freight service, 21,969; cars in company's service, 827. It is significant that during the past three years 77,032 cars have been added to freight equipment. Complaints of car shortages have ceased. Not only has there been a large increase in numbers, but there has also been a material advance in the capacity of hauling and carrying units. Following is a comparison, as between 1906-1907 and 1913-1914, of the number of locomotives and cars per 1,000 miles of line:—

	1907.	1914.
Locomotives .....	156	176
Freight cars .....	4,783	6,636
Passenger cars .....	162	195

**Employees.**—On June 30, 1914, there were 159,142 employees in the service of Canadian railways, and the aggregate of salaries and wages paid was \$111,762,972. Salaries and wages were equal to 62.43% of the total operating expenses. The average rates of remuneration, which have been steadily ascending for a considerable number of years, made further slight advances.

**Accidents.**—Railway operations for the year resulted in death to 600 persons and injury to 4,037. Of the deaths 565 were caused by the movement of trains. The classes of persons affected were as follows:—

	Killed.	Injured.
Passengers .....	27	116
Employees .....	221	
Freight cars .....		
Non trespassers .....	48	
Postal clerks, etc. ....	12	70
One passenger in every 1,868,091 was killed, and one in every 116,175 injured.		



1,221 persons were killed and 122 injured at highway crossings. Of the killed, 44 were trespassers at the time, presumably at protected crossings in cities and towns.

Editor's note.—It will be noticed that at the commencement of the foregoing article the railway mileage at June 30, 1914, is given as 30,795 miles, while the distribution of the same by provinces totals only 30,794. We are advised that this is due to the elimination of the fractional mileage in the abstract. In the report the decimal point is used, but for abstract purposes the fractions are omitted. The difference between the 1,491 miles of increase in 1914 and the 1,492 miles shown in the column headed "Increase" in the second table is further accounted for by the intentional omission in the abstract of a small decrease in the case of mileage in the United States of Canadian lines which for geographical reasons pass through U.S. territory in forming a continuous system between Canadian points.

In reference to the third table showing 22,891.37 miles under construction at June 30, 1914, we are advised that the 2,443.22 miles shown as "In Operation" have nothing to do with the 1,491 miles added to mileage in operation in the year ended June 30, 1914. They are over and above that mileage, and represent lines, which although actively in operation in most instances by the contractors, have not been officially brought into operation. From time to time the Board of Railway Commissioners gives permission to railways under construction to operate certain sections under prescribed conditions, and it may be that such mileage does not come under the Department's jurisdiction for statistical purposes until the whole line is completed. Such mileage is always classified by the Department as being under construction.]

### Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those for 1913-14, from July 1, 1914:

	Gross Earnings	Expenses	Net Earnings	Increase or Decrease
July	\$1,384,000	\$1,163,800	\$420,500	x \$82,800
Aug.	1,367,700	1,123,000	244,700	x 163,800
Sept.	2,108,000	1,519,000	590,700	65,800
Oct.	1,800,000	1,332,100	467,900	x440,900
Nov.	1,670,000	1,123,100	547,100	x417,700
Dec.	1,380,000	908,000	472,100	200,900
Jan.	950,800	773,000	177,800	x175,100
Feb.	1,105,100	823,700	281,400	42,800
	\$12,922,400	\$8,763,900	\$3,258,500	x\$1,373,700
1913-14	\$4,245,000	\$2,861,300	\$1,373,700	.....

x Decrease.

Approximate earnings for three weeks ended Mar. 21, \$881,900, against \$980,900 for the same period 1914.

### Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1913-14, from July 1, 1914:

	Gross Earnings	Expenses	Net Earnings	Increase or Decrease
July	\$3,111,712	\$6,703,525.89	\$3,778,445.83	\$398,347.86
Aug.	3,917,764.34	6,554,606.68	3,873,157.70	597,981.54
Sept.	10,754,179.67	6,987,091.28	4,367,048.39	48,530.30
Oct.	9,282,925.49	6,061,600.13	3,321,325.36	2,281,529.48
Nov.	8,107,000.00	5,413,86.72	2,644,072.17	2,244,173.89
Dec.	7,140,000.00	5,244,475.62	2,199,523.81	2,027,297.90
Jan.	6,100,026.94	4,963,793.64	1,140,233.30	140,059.24
	\$62,447,102.76	\$41,003,442.06	\$21,813,809.56	x\$7,397,801.17
Dec.	\$10,155,225.76	\$13,757,424.59	\$7,397,801.17	.....

x Decrease.

Approximate earnings for February, \$6,503,000, against \$7,365,000 for Feb., 1914, and for two weeks ended Mar. 14, \$3,398,000, against \$4,070,000 for same period 1914.

### Grand Trunk Railway Earnings, Etc.

Subject to audit, the G.T.R. accounts, including the Canada Atlantic Ry., show the following results for the year ended Dec 31, 1914:

Gross receipts	\$41,866,172
Working expenses	33,320,053
Net receipts	\$8,546,119
Income from rentals, outside operations, and car mileage balances	\$1,592,490
Total net revenue	\$10,138,609
Net revenue charges for the year, less credits	\$6,903,955
Balance	\$3,234,654
Deduct G.T.W.R. deficiency	\$659,154
D.G.H. & M.R. deficiency	505,263
	1,164,417
Surplus	\$2,070,237
Less interim dividend on 4% guaranteed stock	\$1,217,500
Balance	\$852,737

which, added to \$81,329 from Dec., 1913, makes a total of \$934,066, which will admit of a further payment for the year of 1½% on the 4% guaranteed stock, making 3½% for the year, and leave a balance of about \$21,000 to be carried forward.

Following are the earnings and expenses for the G.T.R., including the C.A.R., the G.T.W.R. and D.G.H. & M.R. for January:—

Grand Trunk Railway:—	
Earnings	\$2,659,300
Expenses	2,431,800
Net earnings	\$227,500
Grand Trunk Western Railway:—	
Earnings	\$559,500
Expenses	588,900
Deficit	29,400
D.G.H. & M. Railway:—	
Earnings	\$192,000
Expenses	219,300
Deficit	27,300

#### Traffic Receipts of the System.

Aggregate from Jan. 1 to Feb. 28:—

	1915	1914	Incr.	Decr.
G.T.R.	\$5,287,379	\$5,922,436	.....	\$ 635,057
G.T.W.R.	1,087,245	1,030,828	\$42,417	.....
D.G.H. & M.R.	370,874	353,693	17,181	.....
Totals	\$6,745,498	\$7,315,957	.....	\$ 575,459

Approximate earnings for February, \$3,325,036; against \$3,544,016 for Feb., 1914; and for two weeks ended Mar. 14, \$1,709,298, against \$1,916,794 for same period, 1914.

### Grand Trunk Pacific Railway Earnings.

The approximate earnings of the Prairie Section and Lake Superior Branch, 1,104 miles, for February, were \$281,783, against \$313,491 for Feb., 1914, and for two months ended Feb. 28, \$528,794, against \$681,809 for same period, 1914.

### Railway Route Maps Approved.

The Minister of Railways has approved of the following route maps:—

Western Dominion Railway, Mar. 1. — From the international boundary to about 5 miles north of Cardston; and from Pincher Creek to Kootenay Pass, Alta., about 61 miles.

Hudson Bay, Peace River and Pacific Ry., Mar. 1.—From Sec. 11, Tp. 11, Range 5, east of the Principal Meridian, to Sec. 10, Tp. 18, Range 9, east of the Principal Meridian, about 50 miles.

Montreal Warehousing Co.—The annual meeting was held at Montreal, Mar. 1. The following directors were elected for the current year:—E. J. Chamberlin, President; H. G. Kelley, Vice President; J. E. Dolrymple, F. Scott and J. Pullen. C. J. Smith, formerly General Manager, Richelieu and Ontario Navigation Co., and latterly Vice President and General Manager, North Ry., Montreal, was appointed Manager and Secretary, succeeding the late G. H. Hanna.

### Quebec Legislation Respecting Freight Rates.

The Quebec Legislature has amended article 6607 of the Revised Statutes of 1909, relative to rates on railways. The third paragraph of that article, which provides that "The Railway Committee may approve such bylaws in whole or in part, or may change, alter or vary any of the provisions therein," is struck out, and is replaced by three paragraphs which provide: (1) for the approval by the railway committee of such bylaws in whole or in part, the amending of the same, or delaying the coming into force of the same until the interested parties are heard; (2) that bylaws to increase rates cannot be approved until they have been posted up for 30 days before the date fixed for application for approval, and that bylaws for the reduction of tolls must be posted up for three days before application for approval; (3) where freight is to pass over any continuous route operated by two or more companies, the committee may require, on application by the parties interested, the railway companies to agree upon a joint tariff, and may approve of such tariff with or without amendments. A new section is added giving the Quebec Public Utilities Commission jurisdiction in the matter. The act comes into force at once.

### Burrard Inlet Tunnel and Bridge Co. —

Early in 1914 a design made by Sir John Wolfe Barry, Lyster & Partners, of London, Eng., was accepted for a long and heavy bridge across the Second Narrows of Burrard Inlet, connecting Vancouver and North Vancouver, B.C. The accepted design for a bridge to cost \$2,500,000, included the longest swing-span in existence, 581½ ft. between end bearings. In Aug., 1914, this design was rejected as too expensive and bids asked for a cheaper design. In response to this request, three designs were submitted: by Dominion Bridge Co., associated with Armstrong-Morrison & Co., of Vancouver, \$1,916,000; by Canadian Bridge Co., \$1,846,000; and by C. A. P. Turner, associated with Western Foundation Co. of Vancouver, \$1,744,831. On these designs Ralph Modjeski, of Chicago, was asked to report. This report recommended that none of the bids should be accepted but that the bidders be allowed to revise their designs to meet certain requirements prescribed by Mr. Modjeski. However, the company has accepted C. A. P. Turner's design and has awarded the contract to him and his associates to erect the bridge in accordance with that design, as corrected to meet Mr. Modjeski's suggestions, for the bid price noted. The carrying out of the contract is contingent upon the raising of additional funds from the City of Vancouver and from the B. C. Government. (Mar., pg. 94.)

Montreal Ammunition Co., Ltd., has been incorporated under the Dominion Companies Act with an authorized capital of \$250,000 and head office in Montreal. The directors are:—President, H. H. Vaughan, Assistant to Vice President, C.P.R.; Vice President, G. H. Duggan, First Vice President, Dominion Bridge Co.; Secretary-Treasurer, T. Arnold, of Taylor and Arnold, Ltd., railway supplies, etc, Montreal. Other directors:—Phelps Johnson, President and Managing Director, Dominion Bridge Co.; F. L. Wanklyn, General Executive Assistant, C.P.R., and W. F. Angus, Vice President and Managing Director, Canadian Steel Foundries. The company has a large contract from the British Government for shells and cartridge cases and is establishing a plant at Dominion, near Montreal, for their manufacture.



## Timiskaming and Northern Ontario Railway Operations for 1913-14.

The total mileage of track operated by the T. & N.O.R. Commission, as shown in the report for the year ended Oct. 31, 1914, was 438.32 miles, distributed as follows:—Main line, North Bay to Cochrane, 252.19; branch lines:—Charlton branch, 7.80; Porcupine branch and line to Iroquois Falls, 40.11; Elk Lake branch, 28.50; total branch mileage, 76.41; yards and sidings, 108.02; second track, North Cobalt to Haileybury, 1.70. The lines owned also include the Nipissing Jct. spur, 2.10 miles, which is leased to the G.T.R.; and the Nipissing Central Ry. (electric), representing an additional mileage of track owned of 12.64 miles, or a total of 453.06 miles of track owned by the Province of Ontario and managed for it by the commission.

The report of the operation of the Nipissing Central Ry., which is an electric line, will be found on another page of this issue. The main features of the report on the operations of the T. & N.O.R. follow:—

the line are as low, and in many instances lower than on other railways in Canada for a similar service, and it is also stated that the rates for telegraph service on the railway were reduced 20% on Aug. 1, 1914, and the telephone rates on the lines operated in the area served by the line were reduced from 20 to 40% on Nov. 1. The telephone rates are stated by the Ontario Railway and Municipal Board to be the lowest in Canada. Attention is also called to the fact that during the year all-steel passenger trains were put in operation on the line, and that out of the 4,716,331 passen-

of loaded freight cars north and east, 3,036,177; mileage of loaded freight cars, south and west, 1,749,903; mileage of empty freight cars north and east, 364,244; mileage of empty freight cars south and west, 1,615,159; average number of freight cars per train mile, 17.13; average number of loaded freight cars per train mile, 11.44; average number of empty freight cars per train mile, 4.73; average number of tons of freight per train mile, 206.32; average number of tons of freight per loaded car mile, 18.03.

**Train mileage.**—Mileage revenue passenger trains, 385,575; mileage revenue mixed trains, 79,299; mileage revenue freight trains, 338,973; total revenue train mileage, 803,847.

The freight tonnage was distributed as follows:—

	Originating on road.	Received from Can. lines.	U.S. lines.	Total tons.
Products of agriculture .....	7,670	28,785	49	36,504
Products of animals .....	1,268	3,508		4,776
Products of mines .....	106,329	43,601	69,683	219,613
Products of forests .....	355,334	4,172	231	359,837
Manufactures .....	12,001	43,636	1,614	57,251
Miscellaneous .....	24,435	32,140	878	57,453
Other commodities .....	4,154	2,698	80	6,932
<b>Total .....</b>	<b>511,191</b>	<b>158,540</b>	<b>72,635</b>	<b>742,366</b>

	1914.	1913.
Freight revenue .....	\$ 952,090.35	\$ 906,476.16
Passenger revenue .....	544,820.08	576,049.37
Other revenue from transportation .....	83,757.85	84,702.90
Revenue from other sources than transportation .....	90,230.59	88,926.42
<b>Total operating revenue .....</b>	<b>\$1,670,898.87</b>	<b>\$1,656,154.85</b>
Maintenance of way and structures .....	\$ 408,046.15	\$ 430,820.04
Maintenance of equipment .....	284,935.87	242,633.93
Traffic expenses .....	18,872.65	16,857.36
Transportation expenses .....	651,687.20	680,480.08
General expenses .....	105,032.36	106,758.60
<b>Total operating expenses .....</b>	<b>\$1,468,574.23</b>	<b>\$1,477,550.01</b>
<b>Net operating revenue .....</b>	<b>\$ 202,324.64</b>	<b>\$ 178,604.84</b>
Ore royalties, etc. ....	58,687.38	90,046.18
<b>Total income .....</b>	<b>\$261,012.03</b>	<b>\$268,651.02</b>
Deductions from income .....	32,034.80	13,327.30
<b>Net income .....</b>	<b>\$228,977.23</b>	<b>\$255,323.72</b>
<b>Paid to Treasurer of Ontario .....</b>	<b>\$ 225,000.00</b>	
<b>Balance .....</b>	<b>\$3,034.23</b>	

The general balance sheet shows liabilities of \$20,927,532.02, of which \$20,246,451.99 represents the sums loaned by the Ontario Government on construction account, and \$681,080.03 represents the working liabilities. The assets total \$21,337,247.92, made up as follows:—Cost of road to Oct. 31, 1913, \$17,373,118.75; cost of road for year ended Oct. 31, 1914, \$373,934.90; total, \$17,747,053.65; cost of equipment to Oct. 31, 1913, \$2,003,622.49; cost of equipment for year ended Oct. 31, 1914, \$223,938.78; total cost of equipment, \$2,227,561.27; Nipissing Central Ry., \$464,677.97; working assets, \$801,573.21; deferred debt items, \$24,040.79; land agent, \$72,341.03. The balance at credit of profit and loss account is \$409,715.90.

While freight receipts increased \$45,614.19, there was a decrease of \$31,229.29 in passenger receipts. There were also small decreases from other transportation sources, and from other than transportation sources, the net operating revenue showing an increase of \$14,744.02. The operating expenses were 89.8% of the revenue, against 88.7 in the year ended Oct. 31, 1913. The expenditures in all departments, except maintenance of equipment, show decreases; in that department the increase was \$42,301.94 or 2.9%, but it is explained that this is mainly due to the setting aside of \$33,883.92 to a reserve fund to cover depreciation on rolling stock, and to provide for the renewal of cars and locomotives retired, sold or destroyed. The great disappointment on the year's operations was the drop of \$25,546.75 in ore royalties. It is pointed out that the freight charges on

gers carried since 1905, not one had been killed or seriously injured. The road bed, rolling stock and operating equipment are all being kept in a high state of efficiency, and the safety first campaign is being emphasized.

The traffic and mileage statistics follow:—

**Passenger Traffic.**—Total revenue passengers carried, 535,869; number of passengers carried one mile, 22,471,533; number of passengers carried one mile per mile of road, 68,303; average distance carried, 41.93 miles; average amount received from each passenger, \$1.01; average receipts per passenger per mile, 2.42 cents; passenger train service per mile of road, \$1.881.07; passenger service train revenue per train mile, \$1.62.

**Freight traffic.**—Number of revenue tons carried, 742,366; number of tons carried one mile, 86,295,945; number of tons carried one mile per mile of road, 262,298; average distance of haul of one ton, 116.21 miles; average amount received per ton, \$1.29; average amount received per ton per mile, 1.12 cts.; revenue per mile of road, \$2,764.20; revenue per train mile, \$2.28.

**Total traffic.**—Operating revenue per mile of road \$5,061.10; operating revenue per train mile, \$2.07; operating expenses per mile of road, \$4,448.32; operating expenses per train mile, \$1.82; net operating revenue per mile of road, \$612.84; net operating expenses per train mile, 25 cts.

**Car mileage.**—Average number of passengers per car mile, 10; average number of passengers per train mile, 49; average number of passenger cars per train mile, 4.87; mileage of passenger cars, 2,239,856; mileage

## The Attempt to Destroy the St. Croix River Bridge.

Werner Horn, the man who damaged the bridge over the St. Croix River, between St. Croix, N.B., and Vanceboro, Me., and who claimed that he did it in his capacity as an officer of the German army "as an act of war against Great Britain," and who was sentenced to 30 days imprisonment by a Maine court for damaging glass in Vanceboro by explosion, was, on Mar. 7, taken into custody at Machias jail by the U. S. authorities under federal warrants, charged with transporting dynamite in contravention of the interstate commerce laws. The federal grand jury, sitting at Boston, Mass., found three bills against him, alleging the illegal transportation of 60 lbs. of dynamite from New York to Boston, over the New York, New Haven and Hartford Rd.; from Boston to Vanceboro, over the Boston and Maine and Maine Central Rds.; and with carrying dynamite in a suitcase without notifying the officials of those railways. The maximum penalty for the offence is 18 months imprisonment and a fine of \$2,000. At the hearing at Bangor, Me., Mar. 17, it was contended for the prisoner that what he did was "an act of war against Great Britain." On the previous day a motion to have the prisoner's private papers returned to him was refused by the court. These proceedings will postpone the proceedings instituted by the Canadian Government for the extradition of the prisoner to answer the actual charge of dynamiting the bridge.

It was decided by the United States Commissioner at Bangor, Me., Mar. 18, that the accused must be removed to Boston, Mass., for trial under the federal warrants. The Commissioner stated that Horn could be released on \$10,000 bail.

**Railway Lands Patented.**—Letters patent were issued during January, for Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:

	Acre.
Calgary and Edmonton Ry. ....	5,284.95
Canadian Pacific Ry. ....	47.26
Edmonton, Dunvegan and British Columbia Ry. ....	6.04
Grand Trunk Pacific Branch Lines Co. ....	149.19
Grand Trunk Pacific Ry. ....	1,438.8
Kootenay Central Ry. ....	8.36
Qu'Appelle, Lake and Saskatchewan Rds. and Steamboat Co. ....	10,016.48
<b>Total .....</b>	<b>18,951.39</b>



## Canadian Northern Railway Construction, Betterments, Etc.

**Montreal-Ottawa-Port Arthur Line.**—It was stated in the Ontario Legislature recently that no application had been made to the Department to designate any part of the lands to be granted to the C.N.O. Ry. under the provisions of chap. 71 of the statutes of 1909. This act provides that the Government may grant 4,000 acres of land per mile as a subsidy in aid of the building of a line from Sellwood Jct. to Port Arthur, not exceeding 500 miles, subject to certain provisions as to location, selection, etc.

Sir Wm. Mackenzie is reported to have stated in Winnipeg, Mar. 14, that freight service on the line east from Port Arthur will be started May 1, and passenger service June 1.

**Canadian Northern Ontario Ry.**—The bill asking for confirmation of an agreement with the Campbellford, Lake Ontario and Western Ry. respecting certain lines to be constructed as joint lines in Belleville, Ont., and the confirmation of an agreement with the Georgian Bay and Seaboard respecting certain lines to be considered joint lines in the vicinity of Orillia, was withdrawn from consideration in the House of Commons, Mar. 2. R. Blain, M.P., who had charge of the bill, said there were some points about which the companies desired to negotiate further.

The bill to confirm an agreement with the C.P.R. for the construction and operation of joint terminals at North Toronto was also withdrawn. For full particulars see under "Canadian Pacific Ry. Construction, Betterments, etc."

Engineers were in Hamilton recently, making certain investigations, and subsequently the City Engineer was in Toronto in consultation with the Secretary of the C.N.R. Nothing is definitely known of the matters discussed, but the Mayor of Hamilton stated that there appeared to be good ground for thinking that preparations were being made for the building of the Toronto-Hamilton-Niagara line.

**Canadian Northern Ry.**—A press report says that plans have been prepared for large additions to the yards at Port Arthur, Ont., and that about 40 miles of tracks will be added.

Announcement was made in Winnipeg recently that the new lines to Grand Marais and Fisher River would be opened for traffic at once.

The Manitoba Legislature has increased the Winnipeg River Ry. Co.'s authorized capital from \$50,000 to \$500,000. The company has power to build a railway from Lac du Bonnet along the Winnipeg River Valley for 10 miles.

The Board of Railway Commissioners has authorized the C.N.R. to build a spur line to connect with the C.P.R. at Rosetown, Sask.

In the Alberta Legislature, Mar. 9, the Minister of Railways said only partial construction had been done on the line projected from Blackfalds, on the Brazeau line to Calgary, and on the line from Calgary to Macleod. Both of these lines were being built under provincial guarantee of bonds.

Application is being made to the Dominion Parliament for the confirmation of an agreement between the C.N.R. and the G. T. Pacific Ry., respecting the use of terminals at Edmonton, Alberta. Each company contributes certain areas of land, together with tracks, buildings and terminals, which are to be administered as a joint section for terminal purposes. The joint property is to be managed by a terminals board consisting of one representative from each company, and is to be operated by a superintendent to be appointed by the

board. In case of difference between the members of the board, and the failure of the companies to agree, appeal may be made to the Board of Railway Commissioners. The G. T. P. R. shall have the right to erect its own freight shed at a point indicated on the plans annexed to the agreement. The cost of maintenance shall be borne equally by the two companies, but capital expenditures shall be borne by the company upon whose land it is expended. The rights of the G.T.P.R. under its agreement with the city of Edmonton, dated Mar. 6, 1906, are protected. The value of the property brought into the joint premises by the C.N.R. in excess of that brought in by the G.T.P.R. is declared to be \$743,084.70, and on one-half of this the G.T.P.R. agrees to pay interest at the rate of 5% a year. The agreement is for 99 years, from May 1, 1912.

**Lines on Vancouver Island.**—In the British Columbia Legislature recently, the Minister of Railways said the line from Victoria to Port Alberni will have a total length of 135.5 miles. Grading is completed on 128.5 miles of this, but no track has been laid. It is estimated that it will require an expenditure of \$889,624 to complete the grading and bridging, and \$1,346,563 to lay the track and put the line in operation so far as now graded. The C.N.P.R. has paid \$2,893,088 to the contractors on account of the work. On the branch to Patricia Bay, 94% of the grading has been completed, but no track has been laid. The estimated cost of completing the branch, including all sidings, stations, freight sheds, telegraph lines, etc., is \$358,700. The contractors had been paid \$127,628 on account of work done to Feb. 1. (Mar., pg. 102.)

## Dominion Railway Expenditures for 1913-14.

The Minister of Finance in reply to a question in the House of Commons, Mar. 8, gave the following particulars of expenditures on capital and special account respectively from April, 1914, to Mar., 1915, as passed through the Finance Department books:

Railways and Canals capital:	
Canals .....	\$4,989,901.91
Intercolonial and connected railways .....	4,964,867.79
Towards construction of a railway to connect Montreal with National Transcontinental Ry. ....	250,000.00
Hudson Bay Ry. ....	4,340,337.06
Quebec Bridge .....	2,963,616.58
National Transcontinental Ry. ....	6,777,255.98
Prince Edward Island Ry. ....	604,976.66
	\$24,890,955.98

Railway Subsidies:	
Fredericton and Grand Lake Coal and Ry. ....	\$ 111,579.96
Canadian Northern Ontario .....	2,343,335.80
Atlantic and Lake Superior .....	18,449.17
St. John and Quebec .....	59,581.32
Ha Ha Bay .....	16,158.72
Algoma Central and Hudson Bay ..	138,980.56
Esquimalt and Nanaimo .....	405,120.00
Kootenay Central .....	504,622.21
Canadian Northern Pacific .....	178,077.80
Canadian Northern Alberta .....	262,080.00
Algoma Eastern .....	13,022.87
Alberta Central .....	209,768.00
Kettle Valley .....	369,497.28
	\$4,630,273.69

**Foreclosure of a Mortgage of \$300,000 on the World Building, Vancouver, B.C.,** by J. J. Toomey, St. Paul, Minn., is being asked under proceedings instituted Mar. 13. Mr. Toomey is stated to be a confidential agent of J. J. Hill, and the writ was issued in his behalf by A. H. McNeill, K.C., the Vancouver solicitor of the Great Northern Ry.

## Grand Trunk Railway Betterments, Construction, Etc.

**Southern New England Ry.**—Press reports state that work is to be resumed at an early date upon the construction of the line to Providence, R.I., the differences with the contractors having been adjusted. So far as regards the line to Boston, Mass., President Smith, of the Central Vermont Ry., informed the Legislative Committee on Railways recently that the project had not been abandoned, although it was not contemplated to proceed with it at present.

**Lachine, Jacques Cartier and Maisonneuve Ry.**—The Montreal City Council has decided to apply to the Board of Railway Commissioners for an order fixing gradients, etc., on this projected railway. The route of the line has been approved by the Commissioners, and the city is desirous of proceeding at once with the completion of roads and the construction of sewers in St. Denis and Rosemount wards, through which the line will pass. If the gradients were fixed the city could proceed at the minimum of cost with the work on the streets to be crossed by the railway.

**Bronson Ave. Viaduct, Ottawa.**—The question of the erection of a viaduct at Bronson Ave., which has been in abeyance since the order for its erection was obtained in 1912, was before the Ottawa City Council recently. The estimated cost, including land damages, is \$200,000, and the city engineer was directed to prepare detailed estimates. The Dominion elimination of grade crossings fund will contribute \$5,000 towards the cost, and the balance will be divided between the G.T.R. and the city. It is expected that when the viaduct is completed the line running under the Bell St. bridge will be abandoned. (Mar., pg. 100.)

**The Toronto Civic Transportation Committee,** composed of representatives of the Toronto City Council, Toronto Harbor Commission and the Hydro Electric Power Commission of Ontario, and of which T. L. Church, Mayor of Toronto, is chairman, is studying the transportation problem as applied to the radial railway entrances to Toronto, and the street railway situation. The board of engineers consists of R. C. Harris, Commissioner of Works, City of Toronto; F. A. Gaby, Chief Engineer, Hydro Electric Power Commission of Ontario; and E. L. Cousins, Chief Engineer, Toronto Harbor Commission, who is engineer in charge, having been temporarily relieved from his duties with the Harbor Commission for this purpose.

**Three Cent Fares Denied.**—The first application for three cent street railway fares to come before the Public Service Commission for the Second District of New York has been denied. The case was that of the City of Rochester vs. the New York State Rys. The city contended that the company could afford to make the reduction, that the increased traffic would bring up the revenues and that the city's large working population would establish itself outside the congested districts. The commission found that three cent fares with existing traffic would bring the company only 4.6% return on property within the city five cent zone, that a 20% increase of business would be necessary to reimburse the company for the cut, and that this increase would come at rush hours when the system was already overtaxed.

**Guelph not a divisional Point.**—We are officially advised that there is no intention of establishing a G.T.R. divisional point at Guelph, Ont., as stated in press reports recently.



## Canadian Pacific Railway Construction, Betterments, Etc.

**Ontario Division.**—The bill introduced in the House of Commons to confirm an agreement between the C.P.R. and the Canadian Northern Ry., respecting the construction of a joint passenger station at North Toronto, has been withdrawn. The bill was prepared in anticipation of the signing of the agreement, but as this has not been effected it had to be withdrawn, and the matter will probably be taken before the Board of Railway Commissioners, which has power to approve an agreement for 21 years.



New General Offices, Atlantic Division, Canadian Pacific Ry., St. John, N.B.

The draft agreement attached to the bill provided for the use by the Canadian Northern Ontario Ry. of certain lines and the terminal facilities at North Toronto belonging to the C.P.R. It provided that certain lines should be known as common tracks, certain others as joint tracks, and certain premises as joint premises. The agreement set out the work already done, the work to be done by the C.P.R. on the lines and premises common to both, at the joint cost, and the work to be done by each on other property which might be used by both. The operation of the trains over the joint lines and premises were to be under the control of the officials of each company, but the C.N.O.R. trains were to be subject to C.P.R. rules and regulations when on the C.P.R. North Toronto branch, which forms part of the joint tracks. The station was to be under the control of an agent appointed by the C.P.R. and approved of by the C.N.O.R. The construction work which each company was to do was defined. The C.N.O.R. was to pay to the C.P.R. a rental of  $4\frac{1}{2}\%$  on the value of the property brought in. The C.N.O.R. must not permit any other railway to use these facilities, but the C.P.R. might, in which case the rate of payment was to be readjusted. Differences as to the construction of any of the terms of the agreement were to be submitted to the Board of Railway Commissioners.

**Saskatchewan Division.**—The Board of Railway Commissioners has approved revised location plans of the Swift Current northwesterly line, mileage 111.95 to 112.56.

**Alberta Division.**—The Board of Railway Commissioners has approved revised location plans for the Weyburn-Stirling line, mileage 316.63 to 359.39, west of the 4th meridian, Alberta.

The Edmonton City Council decided, Mar. 3, to carry out the old C.P.R. entrance agreement made between the company and the City of Strathcona. The latter city has since been incorporated with Edmonton.

**Rogers Pass Tunnel.**—A press report states that it is likely a system of forced air ventilation will be adopted for the Rogers Pass tunnel, now under construction, and that as a result it may not be found necessary to equip it for operation by electric power. (Mar., pg. 96.)

### Victoria Rolling Stock and Realty Company, of Ontario, Limited.

Following is the directors' report for the year ended Feb. 15, 1915, issued over the signature of the President, Sir Edmund B. Osler:—

The bonds shown in the last annual report as issued against the rolling stock lease series T to the C.P.R. Co. have been disposed of, part of the terms of sale being that this company should be released from any obligation in connection with these bonds. The bonds issued under the lease have been cancelled and the lease assigned. The company, therefore, has no further liability in connection with this lease. The company, however, will receive a commission from time to time as if the bonds were outstanding as agreed upon when the lease was made.

All payments maturing during the year have been promptly met. The profit on the year's business, after charging up directors' fees and expense account, is \$46,810.95. This includes a payment on account of special commission on the cancelled lease. A dividend of 6% per annum has been paid on the capital stock, and \$32,410.95 has been carried forward to profit and loss account, which now stands at \$123,600.55.

ASSETS.	
Obligations on leases .....	\$ 596,075.00
Cash in bank .....	115,659.54
Call loan .....	295,000.00
Interest accrued on same .....	2,472.84
	<hr/>
	\$1,009,207.38



The Canadian Pacific Railway's New Algonquin Hotel, St. Andrew's, N.B.

LIABILITIES.	
Capital stock subscribed \$600,000.00	
Capital stock paid up .....	\$ 240,000.00
Debentures outstanding .....	640,000.00
Interest accrued on same .....	5,333.33
Commission account series T .....	273.50
Balance at credit of profit and loss.	123,600.55
	<hr/>
	\$1,009,207.38

Interest paid and accrued on debentures .....	\$342,789.50
Expense account .....	1,066.74
Directors' fees last year .....	1,400.00
Dividend account .....	14,400.00
Balance carried forward .....	123,600.55
	<hr/>
	\$483,256.79

Balance at credit of profit and loss, Feb. 15, 1914 .....	\$ 91,189.60
Rents received and accrued on leases and interest on advances and bonds held by company .....	392,067.19
	<hr/>
	\$483,256.79

Original cost of rolling stock held under existing leases .....	\$2,939,370.00
Amount paid in on account by railway companies in addition to interest .....	2,299,370.00
	<hr/>
	\$483,256.79

Total amount of company's debentures outstanding .....	\$640,000.00
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The directors for the current year are:—Sir Edmund B. Osler, President; W. D. Matthews, Vice President; Duncan Coulson, His Honor J. S. Hendrie, Jos. Henderson, F. G. Osler, all of Toronto. G. T. Chisholm is Secretary.

### Great Northern Railway Lines in Canada.

**Vancouver Terminals.**—The Vancouver City Council was informed, Feb. 25, that the G.N.R. engineers were completing certain statistical information for the B.C. Government in connection with the plans for the development of the False Creek terminals, and that full plans would be submitted with these. The agreement is one to which the Provincial Government is a party, and the company cannot do anything definite until the province is satisfied. The company, it was stated, means business, and will go ahead with the work as soon as possible. The building of the station will involve the expenditure of \$1,000,000 instead of the \$500,000 originally suggested.

The question of the building of the three east end viaducts, which formed the subject of litigation at the invitation of the British Columbia Electric Ry., has been revived, and it is said that a plan is being arranged for the work to be financed. If the arrangements carry, the G.N.R. will have to apply to the Board of Railway Commissioners for the necessary order. The viaducts, which were eliminated from the order as a result of the litigation, are projected at Pender, Keefer and Harris Sts., and are estimated to cost \$67,250, \$66,723 and \$70,413 respectively. The fourth viaduct is at Hastings St., and is estimated to cost \$95,444. The contract for the erection of the four viaducts was let to the Union Contracting Co., and the new arrangement is under consideration with a view of preventing that company entering an action for damages for breach of contract. (Mar., pg. 102.)

**G.T.R. Apprentices' Dinner.**—A number of former apprentices at the G.T.R. shops at Stratford, Ont., joined with this year's class of 110 at a dinner there, Mar. 18, at which Robt. Patterson, Master Mechanic, presided. W. D. Robb, Superintendent of Motive Power, was the principal speaker.



## Railway Development.

### Projected Lines, Surveys, Construction, Betterments, Etc.

**Alberta and Great Waterways Ry.**—W. R. Smith, Chief Engineer, is reported to have stated recently there are 1,000 men at work on the line; that track has been laid to 16 miles beyond Lac la Biche, and that it is hoped to have the line completed to Fort McMurray by the end of the year. (Mar., pg. 94.)

**Alma and Jonquieres Ry.**—The Quebec Legislature has passed an act extending the time for the construction of this projected railway from Herbertville, on the Quebec and Lake St. John Ry., to Lake St. John, between Great and Little Discharge, 20 miles, and from St. Joseph de Alma easterly to Jonquieres, Que., 30 miles. (Feb., 1913, pg. 83.)

**Athabasca and Fort Vermillion Ry.**—The Alberta Legislature has incorporated a company with this title to build a railway from Athabasca northwesterly to Trout Lake, and on to Fort Vermillion, about 300 miles. The provisional directors and others interested in the incorporation of the company are: J. M. Kernan, F. R. Falconer, J. V. Rawle, A. C. McKay, I. Gagnon, L. Menard, W. R. Day, R. Vance, L. Willey, J. L. Lessard, H. F. Cull, A. E. Walsh, W. N. Pomeroy, C. E. Nanckivell, G. Hees, M. McKernan, S. Willey, J. Dalganeau, Dr. Oliver, Athabasca; N. Dusseault, S. Lawrence, F. E. Wilson, S. Clarke, Fort Vermillion; J. Keith, Edmonton.

**Bassano and Bow Valley Ry.**—The Alberta Legislature has amended the company's act of incorporation by authorizing it to use "steam, electricity or any other motive power," instead of "any motive power but steam," as before; by authorizing the building of the line to Coronation, instead of for 40 miles only from Bassano; to increase the company's power to issue bonds from \$14,000 to \$20,000 a mile, and to extend the time for the building of the line.

**Brule, Grand Prairie and Peace River Ry.**—The Dominion Parliament is being asked to incorporate a company with this title to build a railway from Brule Lake, Alberta, northwesterly to Grand Prairie, and thence to a junction with the Pacific Great Eastern Ry. in the Peace River Block; with a branch from Grand Prairie, crossing the Peace River near Dunvegan, to a junction with the projected Pacific, Peace River and Athabasca Ry. at the Montagneuse River. The provisional directors are D. R. McDonald, Alexandria, Ont.; C. L. Hervey, Montreal; R. H. Pringle, T. A. Burgess, L. Cote, Ottawa. (Feb., pg. 56.)

**Burrard Inlet Tunnel and Bridge Co.**—The amended plans for the erection of the projected bridge across the Second Narrows of Burrard Inlet, Vancouver, B.C., under the accepted Turner-Western Foundations tenders, were laid before the directors Mar. 10, and it was decided to forward them to the Provincial Government for approval. (Mar., pg. 94.)

**Central Canada Ry.**—It is reported that track has been laid from the junction with the Edmonton, Dunvegan and British Columbia Ry., at McLennan, Alberta, to Paul's stopping place, 30 miles. The grading on the remaining 22 miles to the Peace River Crossing is being pushed forward, but as it includes some heavy work it is not expected that any further tracklaying will be done until the autumn. (Mar., pg. 94.)

**Edmonton, Dunvegan and British Columbia Ry.**—W. R. Smith, Chief Engineer, is reported to have stated recently that about 1,000 men are at work on the line, of which

400 are employed on the right of way between the Big Smoky and the Spirit Rivers. Track is being laid between McLennan and Big Smoky River. A sub-contract has been let for the grading of the last 10 miles to this river. This is the heaviest piece of grading on the line. A temporary bridge will be built across the river and the work of putting in the substructure for the permanent steel bridge will be gone on with during the winter of 1915-16.

Objection was made before the House of Commons committee recently to the company's application for an extension of time for the completion of the line. The particular piece of line referred to is the section from Spirit River to the junction with the Pacific Great Eastern Ry. at the Alberta-British Columbia boundary. The committee approved of the extension of time upon receipt of assurance from the Premier of Alberta that the company is building as fast as possible, and that the Province has power under the act guaranteeing the bonds to use pressure if the construction is not proceeding at a satisfactory rate.

The company is asking power under another bill before the Dominion Parliament to build a branch line from tps. 77, 78 or 79, ranges 3, 4, 5 or 6 west of the 6th meridian, southerly through the Grand Prairie district to Jasper House, Alberta. (Mar., pg. 94.)

**Entwistle and Alberta Southern Ry.**—The Dominion Parliament is being asked to incorporate a company with this title to build a railway from Entwistle, Alberta, southerly to the Saskatchewan River, on the boundary between tps. 57 and 58, west of the fifth meridian, 50 miles. The provisional directors are: C. L. Hervey, D. A. O'Meara, Montreal; T. A. Burgess, L. A. Cote, R. H. Pringle, Ottawa. (Mar., pg. 94.)

**Hudson Bay, Peace River and Pacific Ry.**—A bill is under consideration by the Dominion Parliament providing for the changing of the title of this company to that of the Winnipeg and Hudson Bay Ry.

The town of Transcona is asking the Manitoba Legislature for power to bonus the establishing of railways, railway yards, stations and terminals. When the bill came before the law amendments committee of the Legislature, Mar. 12, deputations representing the town, the H. B., P. R. and P. Ry., and other interests were present. Considerable opposition was manifested to the proposition and there was some criticism of the company's position and prospects. (Jan., pg. 10.)

**Huntingdon and Hemmingford Ry.**—The Quebec Legislature has extended the time for the building of this projected railway from Huntingdon, Que., via Hemmington, to the point where the Delaware and Hudson Co.'s railway crosses the International boundary. (Jan., pg. 10.)

**Lake Huron and Northern Ontario Ry.**—The Minister of Lands, replying to a question in the Ontario Legislature, Mar. 3, said the company began construction on the extension of its line Nov. 1, 1913, and reported having expended \$22,256.20 during 1914, in securing right of way, clearing right of way and upon grading, and that within the same period \$56,000 had been expended upon the reconstruction of the original line from Bruce Mines to Rock Lake. The company cannot obtain any land from the Government under the terms of its agreement until 10 miles of the line have been completed. (Oct., 1914, pg. 468.)

**Intercolonial Ry.**—The Minister of Railways, replying to questions in the House of Commons recently, stated that no construction has been done on the projected spur line at Wallace, N. S., on account of which \$60,000 was voted in the fiscal year 1912-13. There has been expended \$74,568.84 on the construction of a spur line or siding to the brickyard at Pugwash, and the work is not yet completed.

Replying to questions in the House of Commons, Mar. 1, the Minister of Railways stated that the building of a branch railway to Guysboro, N. S., was under consideration. He made a similar reply, Mar. 3, to questions as to the building of a line from Sydney through the Big Pond and East Bay district to St. Peters, N. S. (Mar., pg. 94.)

The Minister of Railways replying to a question in the House of Commons, Mar. 8, said the total expenditure for the calendar year 1914 on the ocean terminals at Halifax, on account of the railway construction account, was \$1,181,355.78. The total expenditure on account of docks and per contract at Halifax was \$285,811.10.

**Kent Coal and Ry. Co.**—Application is being made to the New Brunswick Legislature for the incorporation of a company with this title to build a railway from Rexton to the Intercolonial Ry., between Kent Jct. and Adamsville, thence to Chipman, to Minto, and from Rexton to Richibucto Head, N.B. Inghes and Hazen, Fredericton, N.B., solicitors for applicants.

**Montreal and South Western Ry. and Power Co.**—An extension of time has been granted by the Quebec Legislature, for the lines projected to be built by this company, and to be operated by steam, electricity or any other motive power. One line is to start at Adirondack Jct., on the C.P.R., and extend along the St. Lawrence River Valley to the International Boundary, and the other is to start at Adirondack Jct., on the New York Central Rd., and extend to Sunder, Que. (Mar., pg. 94.)

**Northern Pacific and British Columbia Ry.**—The Dominion Parliament is being asked to incorporate a company with this title, having power with the Northern Pacific Ry., to enter into agreements with the Great Northern Ry., and with the Vancouver, Victoria and Eastern Ry. and Navigation Co., for running rights over the latter company's lines between Huntingdon and New Westminster and Vancouver; and to acquire land, and lay out terminals for its own use along the V. V. and E. Ry. The provisional directors are: E. C. Blanchard, General Manager, Northern Pacific Ry., Tacoma, Wash.; G. T. Reid, Assistant to the President, N. P. Ry., Tacoma; A. H. McNeill, Vancouver, B. C. (Feb., pg. 57.)

**Pacific Great Eastern Ry.**—A train service was put in operation on the section of the line from Squamish to Lillooet, 120 miles, Mar. 7. Previously the service had only extended to Anderson Lake, 87 miles. The first train over the line to Lillooet was run Feb. 22, when the Premier of British Columbia and other members of the Legislature were taken for a trip by the contractors. From Squamish there is a gradual ascent to the summit at Alpha Lake, 2,100 ft. above sea level, the maximum gradient being 2.2%, with moderate curvature. Then comes the descent to Pemberton Meadows, which are at an elevation of 700 ft. Tracklaying, it was stated to the party, is expected to be completed to Clinton by the end of the summer, and there is a likelihood of the track being laid southerly from Fort George by the end of the year, and of the whole being ballasted and in operation early in the spring of 1916. (Mar., pg. 95.)



**Pacific, Peace River and Athabasca Ry.**—We are officially advised that, as the result of the reconnaissance survey completed at the end of 1914, it was found that a change would have to be made in the location of the terminals on the Pacific coast, and the Dominion Parliament is being asked to authorize the building of a line from Kitimat Arm to the Naas River, instead of the mouth of the Naas River, as formerly. It was intended to go on with the location surveys this year, but it has not been decided when the work will begin.

The company has acquired the charter of the Naas and Skeena River Ry., which was incorporated by the British Columbia Legislature in 1911, to build from Nasoga Gulf to the Skeena River. In the same year the Dominion Parliament voted a subsidy on the usual terms for the building of a railway from Portland Inlet to the Skeena River, not to exceed 100 miles.

In connection with the Peace River Tramway and Navigation Co., which is owned by the P., P. R. and A. Ry., we are officially advised that it is expected to build a steamboat at Peace River Crossing, to build a tramway at Vermillion Falls, Alberta, and to drill for oil at the Falls, where discoveries of oil shales were made in 1914. (Mar., pg. 95.)

**Salisbury and Albert Ry.**—A petition has been forwarded to the Department of Railways asking that this railway extending from Salisbury, to Albert, N. B., 45 miles, be taken over by the Government and operated as a part of the Intercolonial Ry. The memorialists also ask in the event of the line being taken over that a diversion be built to run into Moncton, instead of to Salisbury, as at present. (Aug., 1913, pg. 377.)

**Smoky Valley and Peace River Ry.**—The Alberta Legislature is being asked to incorporate a company with this title to build a railway from the Canadian Northern Alberta Ry. near the junction of Solomon Creek with the Athabasca River, northerly and westerly to the junction of Sheep Creek with Smoky River, and continuing northerly to a junction with the Canadian Northern Western Ry. near Dunvegan. Short, Woods, Biggar and Collisson, Edmonton, Alberta, solicitors for applicant.

**Toronto, Hamilton and Buffalo Ry.**—Revised plans prepared by W. F. Tye, M. Can. Soc. C. E., for the depression of the company's tracks in Hamilton, Ont., were deposited with the City Engineer, Mar. 9. The estimated cost of carrying out the revised plans is \$931,100. The engineers interested in the several plans submitted met in Ottawa recently and discussed the merits of the proposals with G. A. Mountain, Chief Engineer, Board of Railway Commissioners. (Mar., pg. 95.)

**Vancouver Terminal Ry.**—The Dominion Parliament is being asked to incorporate a company with this title to lay out railway yards, terminals, with buildings for the storage and handling of traffic, the construction of tunnels, viaducts, bridges, etc.; the building of wharves and docks for the handling of traffic by water; the provision of workshops and plants capable of being used in connection with any of the foregoing; the construction of railways connecting its yards, terminals, wharves, docks, etc., with the lines of any railway now existing or hereafter to be built between Vancouver and New Westminster and the mouth of the Fraser River. The provisional directors are: C. F. Pretty, C. N. Pretty, T. T. Dauphinee, T. R. Pearson, J. B. Noble, Vancouver, B. C.

The Vancouver City Council had the matter before it Mar. 1, when J. R. Noble, on behalf of the company, submitted a plan showing a tunnel from Lulu Island, through

to False Creek, and a line from Lulu Island to New Westminster. The company, it was stated, would work in connection with the Vancouver Harbor and Dock Co., formed three years ago. This company proposed to build extensive docks on Lulu Island jutting out into the Gulf of Georgia. The city council desire to have more definite information and plans before they approve of the proposal, and a motion to oppose it before Parliament was defeated by only a narrow majority. The railway committee of the House of Commons, Mar. 11, threw out the bill.

**Western Dominion Ry.**—When the application for the extension of time for the building of this projected railway, which is projected to run from Calgary, via the Old Man River Valley, Pincher Creek, and Cardston, Alberta, to the International Boundary, was under consideration in the House of Commons, Mar. 1, it was stated that about 30 miles of grading had been completed and that work was at a standstill. The company, it was stated, had not settled for right of way taken, and the company's counsel promised that the amounts due would be paid at an early date. The Minister of Railways said landowners could obtain redress by going before the Board of Railway Commissioners, but he would see that the company paid what was due. (Dec., 1914, pg. 545.)

### Railway Rolling Stock Notes.

The C.P.R., between Feb. 15 and Mar. 15, received two class D4 locomotives from its Angus shops, Montreal.

The G.T.R. has received one dining car and one parlor buffet car from Canadian Car and Foundry Co.

The Alberta and Great Waterways Ry., Winnipeg, has bought two combined passenger and baggage gasoline motor cars, 55 ft. long, 200 horse power, for service in northwestern Alberta, from McKen Motor Car Co., Omaha, Neb.

The private car Eaton, owned by J. C. Eaton, President, the T. Eaton Co., Toronto, which was damaged by fire a short time ago, has been repaired by National Steel Car Co., Hamilton, Ont., and is for sale. Mr. Eaton has ordered an all steel private car from Preston Car & Coach Co., Preston, Ont., which will embrace all the latest improvements in its design. Preliminary plans for it have been prepared in the Canadian Northern Ry. Mechanical Department, Toronto.

J. D. McArthur Co., railway contractors, Winnipeg, have ordered 2 ten wheel passenger locomotives with superheaters, from Canadian Locomotive Co. Following are the chief details,—

Weight on drivers .....	102,000 lbs.
Weight, total .....	125,000 lbs.
Wheel base, rigid .....	11 ft. 10 ins.
Wheel base, total engine .....	21 ft. 7 ins.
Wheel base, engine and tender .....	49 ft. 4 1/4 ins.
Heating surface, firebox .....	123.5 sq. ft.
Heating surface tubes .....	1047.5 sq. ft.
Heating surface, arch tubes .....	15 sq. ft.
Heating surface, total .....	1,186 sq. ft.
Driving wheel, diar. ....	63 ins.
Driving wheel centres .....	Cast iron.
Driving journals, diar. and length .....	8 1/2 by 10 ins.
Cylinders, diar. and stroke .....	19 by 26 ins.
Boiler, type .....	Radial stay.
Boiler pressure .....	180 lbs.
Tubes, no. and diar. ....	122—2 ins.; 18—5 3/8 ins.
Tubes, length .....	11 ft. 10 ins.
Injectors .....	Locomotive Type.
Safety valves .....	2—3 in. locomotive pop.
Brakes .....	Westinghouse American
Packings .....	Metallurg
Superheater .....	Schmidt type A.
Weight of tender loaded .....	116,500 lbs.
Tank, type .....	U type.
Water capacity .....	5,000 imp. gals.
Coal capacity .....	9 tons.
Tender, type .....	4 wheel arch bar.
Truck wheel diar. ....	30 ins.
Wheel, type .....	Steel tread, cast iron centres.
Journal, diar. and length .....	5 by 9 ins.
Brake beam .....	Simplex.

### Railway Finance, Meetings, Etc.

**Canadian Northern Ry.**—The Treasurer of Manitoba in his recent budget speech, stated the amount of securities guaranteed by the Province for the C. N. R. was \$25,221,580.

**Canadian Northern Ry.**—London, Eng., cablegram, Mar. 11:—There have just been listed Canadian Northern Pacific £500,000 fours, guaranteed by the Dominion, and Canadian Northern Pacific £570,000 4 1/2's, guaranteed by British Columbia.

**Fredericton and Grand Lake Coal and Ry. Co.**—There has been deposited with the Secretary of State at Ottawa, copy of lease dated Nov. 4, 1914, made between the company and the C. P. R. under which the company's railway is being operated.

**Grand Trunk Ry.**—A bill is before Parliament authorizing the directors to assist by advances any company, the capital of which is held or controlled in behalf of the G.T.R., and to use for such purposes the proceeds of any class of stock heretofore or hereafter issued, such power to be only exercised upon the passing of a resolution to that effect by the shareholders. W. H. Biggar, Vice President, G.T.R., explained on behalf of the company, that it is easier to dispose of G.T.R. securities than those of subsidiary companies.

**Morrissey, Fernie & Michel Ry.**—At the annual meeting in Toronto, Mar. 12, of this company, which is closely allied with the Crows Nest Pass Coal Co., it was stated that the profits from operation for the calendar year 1914 were \$15,564.47. The profits brought forward to Jan. 1, 1914, were \$27,922.58, making a total at credit of profit and loss of \$43,487.05. The directors for the current year are Elias Rogers, President and Treasurer; E. C. Whitney, Vice President; H. B. McGiverin, C. A. Thompson, and W. H. Robinson. R. M. Young is Secretary and Miss L. M. Kelley, Assistant Secretary.

**Ottawa and New York Ry.**—St. Lawrence and Adirondack Ry.—These two Canadian lines are owned by the New York Central and Hudson River Ry., and give that company's lines access to Ottawa and Montreal, respectively. The two companies are applying to the Dominion Parliament for authority to lease their lines to the N.Y.C. and H.R. Ry. When the bill was before the House of Commons it was decided to limit the period to which the lines could be leased to 10 years, and to compel application to be made to parliament for authority to renew the lease. In the Senate, Mar. 11, it was decided to make the period 21 years, to which the Minister of Railways signified his approval.

**Toronto, Hamilton and Buffalo Ry.**—The bill confirming the agreement for amalgamation between the T. H. and B. Ry. and the Erie and Ontario Ry. was approved by the Railway Committee of the House of Commons, Mar. 11. The committee fixed the bonding powers of the amalgamated company at \$10,000,000 instead of \$15,000,000 as applied for.

**Incline Railway for Banff.**—An order-in-Council was passed at Ottawa, Mar. 3, authorizing the Minister of the Interior to make an agreement with T. R. Deacon, M. Can. Soc. C. E., Winnipeg, granting permission for the construction and operation of an incline railway up the face of Cascade Mountain, Banff, Alberta. We are officially advised that the surveys have not been completed, but it is expected to complete them during the summer and to have the line completed to the top of Cascade Mountain in two years. Electricity will be the motive power, but none of the other details have been settled.



### Grand Trunk Pacific Railway Construction.

The Minister of Railways stated in reply to questions in the House of Commons, Mar. 3, that the following information as to the amount of expenditure charged to the account of the G.T.P.R. since 1911 had been supplied by the company:—Prairie section—1911-12, \$1,051,330.73; 1912-13, \$1,966,847.18; 1913-14, \$1,587,393.98; 1914-15, \$2,244,593.96; total, \$6,850,165.90. Mountain section—1911-12, \$12,275,403.44; 1912-13, \$15,896,403.44; 1913-14, \$23,990,160.84; 1914-15, \$16,726,213.36; total, \$68,888,065.24.

Press reports state that it is expected to inaugurate regular daily service between Winnipeg and Prince Rupert at an early date.

Oil burning locomotives are to be used for the traffic between Edmonton and Prince Rupert, and excavations have been started at Fort George, B.C., for the erection of two 35,000 gall. oil tanks for use in this connection.

The floating dry dock at Prince Rupert is expected to be ready for use in May. The ship repairing plant in connection with the dock is already completed. (Jan., pg. 19.)

### National Transcontinental Railway Construction.

Replying to a question in the House of Commons, Mar. 1, the Minister of Railways said that on June 5, 1914, the Government bought for \$175,000 a piece of line, 5.5 miles long, for use in connection with the N.T.R. This line connected with the N.T.R. only at the east end near Cape Rouge, Que., and in order to facilitate operation an additional Y connection, 2,481 ft. long, is being constructed at the Cape Rouge end. At the west end a connection 2.3 miles long has been built in order to effect connection with the Leonard shops. The east end of the line is in Cape Rouge parish and the west in St. Malo parish. On Mar. 3 another question elicited from the Minister the fact that \$11,000 is being expended upon repairing the line purchased.

The Minister of Railways informed the House of Commons, Mar. 3, that work had been started on the N.T.R. terminals in the city of Quebec. There had been expended by the commission \$372,514.86 for lands, and by the C.P.R. \$154,293.83 on tracks and buildings.

The Minister of Railways, replying to questions in the House of Commons recently, said the expenditure on the Quebec bridge since Mar. 12, 1912, had been:—1912-13, \$1,512,825.96; 1913-14, \$2,604,105.61; and to Jan. 31, 1915, \$2,964,911.40. Total, \$7,081,842.97.

In reply to questions in the Senate, Mar. 2, Senator Loughheed stated the N.T.R. was operated from Dec. 1, 1913, to May 1, 1914, from Hervey Jct., mileage 72 west of Quebec, to the divisional point at Parent, mileage 245 west of Quebec; and during this winter it is being operated from Cochrane, Ont., east to Peter Brown Creek, 143 miles. These are the mileages between Quebec and Cochrane, which have been operated.

In the Senate, Mar. 11, on a motion for the submission to Parliament of copies of all petitions for traffic on the N.T.R. between Abitibi and Hervey Jct., Senator Loughheed stated that the contractors for the building of the line between these points were operating a bi-weekly service for which they were receiving \$12,000 from the Government. The contractors had pointed out that no revenue was being made from this operation. The Minister of Railways made a personal investigation of the situation in the

late autumn. The line was being operated also between Hearst and Amos, 270 miles west of Cochrane. As to further operation it will be necessary almost immediately for the Government to operate in a limited way the entire system for the purpose of maintenance. Whatever difficulties settlers along the line might experience at present, there was a possibility of these being overcome at a very early date, as the line would have to be operated to prevent the decay into which it would necessarily fall except it becomes a going concern. He continued:—"Immediately the contractors completed their contracts between Quebec and Cochrane the Government took the necessary steps to notify the Grand Trunk Pacific of the completion of the road and of the necessity of their carrying out or fulfilling the obligations which fall upon them under the contract between the Crown and the company. The company has not responded with that alacrity which the Government would very much like to see. They have not pointed out wherein the road is incomplete in any particular respect, but they rely upon a general objection, which is a very favorite objection, in special pleading. What the result of this may be I cannot say. The probabilities are that negotiations between the G.T.P. and the Government may be extended over some period of time, but in the meantime the perplexities which must necessarily attend the handling of so important a matter will be thrown upon the shoulders of the Government." (Mar., pg. 102.)

Senator Loughheed stated in the Senate, Mar. 12, that the G.T. Pacific Ry. had filed "omnibus objections" to the taking over of the line from Moncton, N.B., to Winnipeg, in respect to which there would have to be negotiations between the company and the Government. Under the terms of the agreement entered into in 1903, the G.T. Pacific Ry. Co. undertook to take over the line when completed, on lease for 50 years at a rental of 3% upon the total cost, after the first seven years.

### Traffic Orders by the Board of Railway Commissioners.

#### Interswitching at Arnprior.

23250. Feb. 1. Re application of Gillies Bros., Ltd., of Braeside, Ont., and G. R. Baker, of Arnprior, Ont., under sec. 228 of the Railway Act, for an order requiring the construction of interchange tracks, for the purpose of interchanging cars between the C.P.R. and the G.T.R. at Arnprior, it is ordered that C.P.R. and G.T.R. tracks at Arnprior be so connected as to provide for the reasonable receiving, forwarding, delivering, and the interswitching of traffic between their respective railways, as shown on the plan filed by the applicants with the Board, and that if the C.P.R. and G.T.R. do not agree, within 15 days from the date of this order, to accept the said plan, the G.T.R. thereafter submit a plan to the C.P.R., and if an agreement is not arrived at within 15 days from the submission of such plan by the G.T.R., any points of disagreement existing between the parties be settled by an engineer of the board; the plan, in either event, to be approved by the board. That the necessary materials be supplied and the work of construction done by the G.T.R. That the cost of constructing the interchange track be paid one half by the G.T.R. and one half by Gillies Bros., Ltd.; the payment of Gillies Bros., Ltd., of their portion of the cost to be paid by them on completion of the work and upon an account rendered to them by the G.T.R. That the cost of maintenance, and the cost of protection, if any, as may be ordered by the

board in respect of any portion of the said interchange track, be borne by the G.T.R. That the work herein required to be done be commenced by May 1, 1915, and completed within 30 days thereafter.

#### Suspension of Maine Central Rd. Tariffs.

23272. Feb. 10. Re order 23232, Feb. 2, suspending certain tariffs filed by the Boston & Maine and the Maine Central Railroads until further order. Upon its appearing that the Maine Central tariff, C.R.C. no. C. 832 is not one of the tariffs providing for a general increase of 5% in the rates between the company's stations in Canada to which the order was intended to apply; it is ordered that order 23232 be rescinded in so far as it relates to the said Maine Central tariff, effective Feb. 15, 1915.

#### Coal Rates to Newboro, Ont.

23375. Feb. 26.—Re the complaint of W. S. Bilton, of Newboro, Ont., complaining of excessive freight charges on coal shipped from Ogdensburg, N.Y., to Newboro, via ferry at Prescott, it is ordered that the G.T.R. and the Canadian Northern Ry. be jointly directed to file a tariff of joint rates to apply on coal in carloads of a minimum weight of 15 gross tons, shipped from Prescott to all points on that portion of the C.N.R. line formerly known as the Brockville, Westport and Northwestern Ry., via Lynn; the G.T.R.'s proportion of the joint rates to be 56 cts. per gross ton, including switching from the Ogdensburg ferry dock; and the C.N.R.'s proportion thereof to be less than its local mileage rates on coal by amounts corresponding to the reduction made by the G.T.R. from its local mileage rate, having regard to the mileage in each case.

#### Rates on Newsprint to West of Fort William.

General order 135. Mar. 22.—Re complaint of the Middle West Federated Boards of Trade, on behalf of the Sun Publishing Co., of Brandon, Man., complaining that the rates charged by the C.P.R. on newsprint paper from Ottawa and other eastern shipping points to Brandon, as compared with the rates charged to Winnipeg, unjustly discriminate in favor of Winnipeg and against Brandon, it is ordered that the through rates of freight on newsprint paper, in carloads of 40,000 lbs. minimum weight, from the points of shipment thereof, by the all-rail route, to the Canadian points of consumption west of Fort William, be made by the addition to the 5th class published tariff rates from Port Arthur and Fort William of the following special arbitraries, per 100 lbs. for the purposes of this order, viz.:—from Sault Ste. Marie, Espanola, and Sturgeon Falls, Ont., 15 cts.; from Merriton and Ottawa, Ont.; Hull, Windsor Mills, Shawinigan Falls, and Grand Mere, Que., 25 cts. That other points of shipment of newsprint paper east of Sault Ste. Marie (if any) be added to those named above at through rates appropriate to these herein prescribed. That the said through rates take effect not later than April 15.

#### American Railway Engineering Association.

—At the annual convention in Chicago in March the following officers were elected:—President, R. Trimble, Chief Engineer, Maintenance of Way, Pennsylvania Lines West, Northwest System, Pittsburg, Pa.; Vice President, J. G. Sullivan, Chief Engineer, Western Lines, C.P.R., Winnipeg; Treasurer, G. H. Bremner, Assistant District Engineer, Interstate Commerce Commission, Chicago; Secretary, E. H. Fritch, Directors for three years each:—H. R. Safford, Chief Engineer, G.T.R.; A. N. Talbot, Professor of Municipal and Sanitary Engineering, University of Illinois; and C. W. F. Felt, Chief Engineer, Atchison, Topeka and Santa Fe System.



# Canadian Railway AND Marine World

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## NOTICE TO ADVERTISERS.

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TORONTO, CANADA, APRIL, 1915.

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## Train Accident Caused by the Sliding of an Earth Fill.

The sliding of an earth fill under a moving railway train is one of the rarest of the causes of railway accidents. Such an accident is recorded, however, in an accident bulletin of the Interstate Commerce Commission. It occurred May 27, 1914, near West Point, Tex., on the Missouri, Kansas & Texas Ry. The fill was made in a ravine at the base of a hill and was composed largely of a soapstone formation, which when wet had little holding qualities. Apparently no outlet was left through the fill for water draining from the hills behind, and a pool was formed back of the fill about 7½ ft. deep and 75 ft. long. During the three months preceding the accident, Weather Bureau records show that nearly 25 in. of rain had fallen. The track on the fill was on a 4 degree curve, and the train which was passing over the fill when the slide occurred was a slow freight running only 5 to 10 miles an hour. The locomotive and first four cars were derailed and the locomotiveman and fireman were crushed under the overturned locomotive. The roadmaster, trainmaster, and district engineer agree that the fill had become soft from the continued rains. While the embankment slipped under a slow freight train, it is stated that a passenger train running 20 to 25 miles an hour had passed over the track only 40 minutes earlier.

**Coal Importation for Intercolonial Ry.**—Senator Loughheed, replying to questions in the Senate, Mar. 10, said coal had been purchased in the U.S. for use on the Intercolonial Ry. as follows:—1900-01, 14,300 gross tons, at \$3.75, f.o.b. Montreal; 27,646 gross tons, at \$5.30, f.o.b. St. John; 3,977 gross tons at \$3.93, f.o.b. St. John; 14,600 gross tons at \$4.20, f.o.b. St. John, all duty free; total, 61,079 gross tons. The reason for these purchases was apprehension on the part of the management that friction between certain miners and coal operators would lead to cessation of work. In 1908-09 36,059 gross tons were bought at \$4.95, f.o.b. St. Hyacinthe, duty paid. The reason for this purchase was the strike at Springhill collieries and the inability of other collieries to make up shortage. In 1913-14 15,331 net tons were bought at \$4.10, f.o.b. Ste. Rosalie, duty paid. The reason for this purchase was that there was a greater consumption of coal than was anticipated, which could not be met from the usual sources of supply.

**Algoma Central Railway Receivership.**—By an order of the Exchequer Court, dated Feb. 20, the Algoma Central and Hudson Bay Ry. Co. has been placed in the hands of two receivers, T. J. Kennedy, President and General Manager of the company, and Vivian Harcourt, who is a partner in the accounting firm of Deloitte, Plender, Griffiths and Co., of London, Eng., and Montreal. The receivers will have their headquarters at Sault Ste. Marie. We are advised that no changes are contemplated at present in the officials of the railway in consequence of the receivership. The Algoma Central Terminals, Ltd., the Algoma Eastern Ry. Co., and the Algoma Eastern Terminals, Ltd., are not included in the receivership.

**Paul Seurot, M.Can.Soc.C.E.,** Chief Engineer for Jacobs & Davies, Inc., Montreal, has been awarded the Canadian Society of Civil Engineers' Gzowski medal, for the best paper for the year 1914.

**White Pass and Yukon Route.**—Gross earnings for January, \$6,275, against \$13,611 for January, 1914.

## Manufacture of High Explosive Shells in Toronto.

A contract for 100,000 eighteen pound high explosive shells for the British Government has been given to the Universal Tool Steel Co., Ltd., in which Sir Wm. Mackenzie and Sir Donald Mann are shareholders. The company has acquired temporarily a vacant factory at 133 Dufferin St., Toronto, which is being fitted up preparatory to the installation of the machine tool equipment, which will consist of 24 new automatic turret lathes, nine or ten 18 to 20 in. engine lathes, and about 12 odd tools such as drills, millers, etc., for the auxiliary work. Most of this equipment, with the exception of the new turret lathes, is being secured from the various Canadian Northern Ry. shops throughout the country, whatever machines it is possible to spare being used. The capacity of the plant is expected to be about 800 shells a day.

S. J. Hungerford, Superintendent of Rolling Stock, C.N.R., is organizing the plant and supervising the installation of the equipment. D. M. Galloway, General Foreman, C.N.R. Locomotive Shops, Winnipeg, is acting Superintendent, and A. Hopkirk, Shop Engineer, C.N.R. Locomotive Shops, Winnipeg, is Shop Engineer.

**Smokeless firing of locomotives** is impossible unless they are correctly designed, with not less than 90% ashpan openings, and 46% openings in the grate.

**Furnaces for treating high speed steel** should be so constructed that the oxygen of the air from the blast and fuel opening will not attack the metal, as this will result in scale, blisters, uneven heating, cracking in hardening and general bad results.

**Shell Orders From Russia.**—Press reports state that W. W. Butler, Vice President, Canadian Car and Foundry Co., Montreal, who has been in Petrograd for some time, has secured orders from the Russian Government for shells to the value of approximately \$80,000,000; that as many of these as possible will be made at the company's plants at Turcot and Dominion, near Montreal and Amherst, N.S.; and that subcontracts for the balance will be let both in Canada and in the U.S.

**Taxation of Railways in British Columbia.**—The B.C. Legislature has under consideration an amendment to the Municipal Clauses Act, as it affects the taxation of railways. It is proposed to fix the basis of assessment at \$10,000 a mile, the same as is fixed for provincial purposes. Other amendments are for the purpose of settling difficulties that have arisen owing to the contention of the electric railways that they do not own the streets on which their tracks are laid, and that the tracks are in the nature of street improvements.

The Mackay Companies' report for 1914 shows assets consisting of investments in other companies of \$91,996,160, and cash \$598,959. The liabilities consist of \$50,000,000 preferred stock and \$41,380,400 common stock, leaving a surplus of \$1,205,719. The income from investments is \$4,264,014, an increase of \$62,000. It was reported that business depression both before and since the outbreak of war, had affected the returns in the U.S., and rigid economies in regard to operating expense are being insisted on. The contract with the C.P.R., which has been renewed, is entirely different from the usual railway telegraph contract in the States, providing for an interchange of telegraph business, the same as between two telegraph companies, and it does not burden the telegraph company with deadhead railway telegrams. The directors were reelected.



## Mainly About Railway People.

**R. Bryant**, a former inspector of bridges for the G.T.R., died at Brockville, Ont., Mar. 9, aged 75.

**Geo. H. Ham**, of the C.P.R. head office staff, returned to Montreal, Mar. 18, after spending a few weeks holiday in Florida.

**Morley Donaldson**, Vice President and General Manager, Grand Trunk Pacific Ry., returned to Winnipeg early in March, after spending a short holiday in California.

**T. H. White**, Chief Engineer, Canadian Northern Pacific Ry., Vancouver, B.C., visited the company's head offices in Toronto at the end of March.

**Miss Helen McNicoll**, daughter of **D. McNicoll**, formerly Vice President, C.P.R., Montreal, has had two pictures accepted by the Royal Society of British Artists.

**J. J. Carter**, a brakeman on the C.P.R., has been awarded the Albert medal of the second class by the King for saving life at Tweed, Ont., last year.

**M. H. MacLeod**, General Manager and Chief Engineer, Canadian Northern Ry., Winnipeg, is spending a few weeks in California.

**J. G. Sullivan**, Chief Engineer, Western Lines, C.P.R., Winnipeg, has been elected Second Vice President, American Railway Engineering Association.

**Grant Hall**, Vice President and General Manager, Western Lines, C.P.R., made his first trip of inspection in that capacity over the lines from Winnipeg to Port Arthur, Ont., recently.

**Jas. Lyman**, formerly of Kingston, Ont., and also formerly Freight Agent for Detroit and Milwaukee Rd., at Linden, Mich., died at his home in Manchester, N.Y., Mar. 20, aged 91.

**Mrs. F. L. Wanklyn**, wife of the General Executive Assistant, C.P.R., Montreal, is making an active canvass in the interest of the corps for contributions for mufflers, mitts and heavy socks.

**Sir Thos and Lady Tait** and **Miss Tait**, who have been spending part of the winter in Cuba, Florida and South Carolina, expect to spend April at Hot Springs, Va., and to return to Canada early in May.

**H. Rindal**, Division Engineer, C.P.R., Vancouver, B.C., read a paper on the C.P.R. Vancouver terminal before the Canadian Society of Civil Engineers, Vancouver branch, Mar. 4.

**Sydney E. Junkins**, who retired from the Vice Presidency of Westinghouse, Church, Kerr and Co., New York, in November last, is practising as a consulting engineer in New York and has spent a portion of the winter in California.

**Lieutenant Jas. O'Reilly**, chief clerk, Sleeping, Dining and Parlor Cars and News Department, C.P.R., Winnipeg, was presented with a silver flask recently by the local staff, on his leaving for active service with the Army Service Corps.

**H. McCall**, Superintendent, G.T. Pacific Ry., Melville, Sask., was entertained to dinner at Edmonton, Alta., at the end of February, by the local staff, on the occasion of his removal from that district to Melville.

**Henry Yates**, formerly chief checker, G. T. R. freight sheds, London, Ont., and father of **G. W. Yates**, Minister's Secretary, Railways and Canals Department, Ottawa, died at London, Mar. 7, aged 67. He was placed on the pension fund about two years ago.

**Mrs. H. E. Whittenberger**, wife of the General Superintendent, Ontario Lines, G. T.R., Toronto, has received an acknowledgment of a shipment of shirts, sweaters, socks and mufflers, for soldiers of the second Canadian contingent, which was con-

tributed by wives of G.T.R. officials in Toronto and district.

**A. G. Clark**, accountant, C.P.R., Vienna, Austria, who, with others of the staff there, was held as a prisoner on the outbreak of war, has been released, and has returned to England with his wife and family. Three members of the Vienna staff are still held prisoners.

The engagement is announced of **Miss Isabel Piers**, daughter of **Arthur Piers**, of Liverpool, Eng., formerly Manager, Steamship Department, C.P.R., to **Capt. G. S. Carne, J.P.**, of the Glamorgan Yeomanry, eldest son of the late **J. D. Carne**, of Nash Manor, Cowbridge.

**Sir Frederick Harrison**, latterly a director and formerly General Manager of the London & North Western Ry. and since 1909 Deputy Chairman of the South Eastern Ry. and a member of the South Eastern & Chatham Ry., managing committee, died in England recently.

**J. S. Morrison**, of Edinburgh, Scotland, who is reported to have been awarded the distinguished conduct medal for service as a dispatch rider in France and Belgium, is a nephew of **J. W. Stewart**, of Foley, Welch and Stewart, railway contractors, Vancouver, B.C.

**J. R. Grant**, M. Can. Soc. C.E., who has been Secretary-Treasurer of the Vancouver

In affectionate remembrance of

SIR WILLIAM WHYTE,

who died at San Diego, California,  
April 14, 1914,

Deeply regretted by the thousands  
who had the privilege of know-  
ing him.

Branch of the Canadian Society of Civil Engineers, was entertained to dinner at Vancouver, recently, by a number of local engineers, on his departure for England, where he is joining the Royal Engineers for service during the war.

**W. R. Smith**, Chief Engineer, Edmonton, Dunvegan and British Columbia Ry., Alberta and Great Waterways Ry., and Central Canada Ry., gave an address, Mar. 10, before the Industrial Association at Edmonton, Alberta, upon the industrial and trading possibilities of the country to be opened up by these railways.

**George W. McMullen**, of Picton, Ont., who was best known as an inventor, died of heart disease on a train between Chicago and Evanston, Ill., Mar. 23. He was one of the original promoters of the Central Ontario Ry. Of late he has been principally engaged in developing a patent for the preservation of railway ties by a drying process.

**George Paton**, who has been appointed agent, C.P.R. Telegraphs, Toronto, was born at Toronto, Mar. 13, 1882, and entered telegraph service, Mar. 26, 1900, since when he has been, to May 31, 1910, clerk, Audit Department, Great North Western Telegraph Co., Toronto; June 1, 1910, to Oct. 1, 1912, accountant, C.P.R. Telegraphs, Toronto; Oct. 1, 1912, to Mar. 20, 1915, assistant agent, C.P.R. Telegraphs, Toronto.

**William Henry Maund**, who has been appointed Secretary-Treasurer, Timiskaming and Northern Ontario Ry. Commission, Toronto, was born at Kingston, Ont., Nov. 20,

1884, and entered railway service July, 1899, since when he has been, to Sept., 1907, messenger, billing clerk, cashier and ticket agent, consecutively, Kingston and Pembroke Ry., Kingston, Ont.; Oct., 1907, to Mar., 1915, clerk, agent and Travelling Auditor, consecutively, Timiskaming and Northern Ontario Ry., at various points, latterly at North Bay, Ont.

**Frank L. Hutchinson**, whose appointment as Manager in Chief of Hotels, C.P.R., Montreal, was announced in our last issue, was born at London, Ont., Aug. 10, 1869, and first entered C.P.R. service in 1908, since when he has been, to 1910, Manager, Chateau Frontenac, Quebec, Que.; 1911, Assistant to Manager in Chief of Hotels, C.P.R.; 1912 to 1913, Superintendent of Hotels in Alberta and British Columbia, C.P.R.; Aug., 1913 to Mar., 1915, Manager, Windsor Hotel, Montreal. Prior to entering the C.P.R. service, he was for 4 years a member of the Montreal Stock Exchange, and for 13 years prior to that was with the Bank of Montreal.

**Thomas Webb Nash**, who died in the General Hospital, Kingston, Ont., Mar. 24, was born in 1827, and entered railway service in 1849, since when he had been, to 1850, chain man, Boston, Ogdensburg and Lake Huron Ry.; 1850 to 1851, explorer and surveyor, Belleville and Peterboro Rd.; 1852 to 1858, draughtsman, G.T.R.; 1858 to 1864, on special surveys, G.T.R.; 1866 to 1867, engineer, Kingston Penitentiary Ry.; 1867 to 1871, Chief Engineer preliminary surveys, Kingston and Frontenac, Kingston and Madoc, and Kingston and Napanee Rys.; 1871 to 1876, Chief Engineer, Kingston and Pembroke Ry.; 1876, Engineer, Kingston loop line, G.T.R.; 1876 to 1885, Chief Engineer, and from that year to the taking over of the line by the C.P.R., also Secretary and Treasurer, Kingston and Pembroke Ry., Kingston, Ont.

**C. W. P. Ramsey**, Engineer of Construction, C.P.R., Montreal, who has been granted extended leave of absence to take command of the Canadian overseas railway construction corps, was born at Bury, Que., Jan. 15, 1883. He entered C.P.R. service as apprentice in Mechanical Department at Delorimier Avenue shops in 1898 and served in various minor capacities until Sept. 19, 1903, when he was transferred to the construction department at Montreal, passing through the various grades of draughtsman, transitman, Assistant Engineer and Division Engineer. On Mar. 15, 1912, he was appointed Engineer of Construction, Eastern Lines, holding that position until Feb. 25, 1915, when granted leave of absence as above stated. He was closely identified with the construction of several of the company's lines, notably the Lindsay, Bobcaygeon and Pontypool Ry., the Toronto-Sudbury branch, and the Campbellford, Lake Ontario and Western Ry., as well as the double tracking of a large portion of the eastern lines.

**C. T. Delamere**, who has been appointed acting Engineer of Construction, C.P.R., Montreal, was born at Brainerd, Minn., Mar. 18, 1881, and graduated C.E., from the University of Minnesota in 1902. He entered railway service in July, 1902, since when he has been, to May, 1903, instrument man, Northern Pacific Ry., Duluth, Minn.; May, 1903, to June, 1905, Resident Engineer, same road, Jamestown, N.D.; June, 1905, to Nov., 1906, Roadmaster, same road, Jamestown, N.D.; Nov., 1906, to Apr., 1908, Assistant Engineer, same road, Valley City, N.D.; Apr., 1908, to June, 1910, Division Engineer, same road, Missoula, Mont.; June, 1910, to July, 1911, in private practice; July to Sept., 1911, Resident Engineer, Canadian Northern Ontario Ry., Nipigon, Ont.; Sept., 1911, to June, 1912, Division Engineer, same road, Nipigon, Ont.; June, 1912, to Aug., 1913,



Assistant District Engineer, same road, Port Arthur, Ont.; Aug., 1913, to Nov., 1915, Assistant Engineer of Construction, C.P.R., Montreal.

**A. J. McGee**, Secretary-Treasurer, Timiskaming and Northern Ry. Commission, Toronto, died there, Mar. 1, from pneumonia. He was born at Lachine, Que., Jan. 24, 1876, and was for some time in Canada Atlantic Ry. service in the Audit Department, where he was Auditor of Passenger Traffic. He was appointed Secretary-Treasurer of the T. & N.O.R. Commission in 1905. At a meeting of the Commission, Mar. 4, the following resolution was passed:—"The Commission of the Timiskaming and Northern Ontario Ry., with deepest sorrow and sincere regrets, are called upon to chronicle the untimely death of their friend, the Secretary and Treasurer of the Commission, Alfred John McGee. For ten years the late Secretary has been in charge of the responsible duties of Secretary and Treasurer of the Commission, and has acquitted himself, not alone as a good, loyal, conscientious servant, but at all times with the paramount thought how best to serve the interests of the Commission, the Province, and the public utilities that were within his charge."

**Walter Burdett Pratt**, whose appointment as General Superintendent, Sleeping and Dining Cars and Hotels, Canadian Northern Ry., was announced in our last issue, was born at Sibbertoft, Northamptonshire, England, Jan. 18, 1870, and entered railway service in Aug., 1883, since when he has been, to Oct., 1886, office boy in Audit Office, C.P.R., Winnipeg; Nov., 1886, to Apr., 1889, chief clerk, Purchasing Department, C.P.R., Winnipeg; May, 1889, to Sept., 1890, on construction work, C.P.R., Winnipeg; Oct. to Dec. 1890, temporary cashier, Treasurer's Office, C.P.R., Winnipeg; Dec., 1890, to Nov., 1894, accountant, Sleeping and Dining Car Department, C.P.R., Winnipeg; Dec., 1894, to Sept., 1898, Agent, same department, Winnipeg; Oct., 1898, to Mar., 1903, Assistant Superintendent, Sleeping and Dining Cars and Hotels, Western Lines, C.P.R., Winnipeg; May, 1903, to Feb., 1911, Superintendent, Sleeping and Dining Cars and News Service, Canadian Northern Ry., Winnipeg; Mar., 1911, to Jan. 31, 1915, Superintendent, Sleeping and Dining Cars, Hotels and News Service, C.N.R., Winnipeg. His office is at Winnipeg for the present, but it will probably be removed to Toronto in the near future.

**Alphonse Dion**, whose appointment as Assistant Superintendent, National Transcontinental Ry., Monk, Que., was announced in our last issue, was born at Montmagny, Que., Dec. 18, 1857, and entered railway service in Sept. 1874, since when he has been, to June 1876, telegraph operator and relief agent, G.T.R., Warwick, Danville and Riviere du Loup, Que.; June 1876 to Sept. 1878, telegraph operator and train baggage man, Intercolonial Ry., Riviere du Loup, Que., and Moncton, N.B.; Sept. 1878 to Apr. 1879, telegraph operator, Dominion Telegraph Co., Quebec, Que., and St. John, N.B.; Apr. 1879, to Dec. 1883, dispatcher, Quebec, Montreal, Ottawa and Occidental Ry., now part of the C.P.R., Three Rivers and Hochelaga, Que.; Dec. 1883, to July 1884, Agent, C.P.R., St. Martins Jct., Que.; July 1884 to Oct. 1885, dispatcher, C.P.R., Ottawa, Ont.; Oct. 1885 to Sept. 1897, agent, C.P.R., St. Martins Jct., Que.; Sept. 1897 to Aug. 1900, dispatcher, C.P.R., Ottawa and Montreal; Aug. 1900 to Sept. 1901, Chief Dispatcher and Trainmaster, Great Northern Ry. of Canada and Quebec and Lake St. John Ry., Quebec and Grand Mere, Que.; Sept. 1901 to Feb. 1915, dispatcher, Intercolonial Ry., Riviere du Loup, Que.

**Allan Purvis**, who has been appointed Superintendent, District 2, Ontario Division,

C.P.R., London, was born at Batavia, Java, June 29, 1878, and educated at the Merchant Taylor's School, Liverpool, Eng. He entered C.P.R. service at an early age, and was from Aug., 1890, to Feb., 1891, messenger,



**F. L. Hutchinson.**  
Manager in Chief of Hotels, Canadian Pacific Railway.



**W. Pratt, Jr.,**  
General Superintendent, Sleeping, Dining, Parlor Cars and Hotels, Canadian Northern Railway.

Stores Department; Feb. to Nov., 1891, storeman; Nov., 1891, to Sept., 1892, junior clerk, Vancouver, B.C.; Sept., 1892, to Aug., 1893, timekeeper, Donald, B.C.; Aug., 1893, to Oct., 1894, clerk, Vancouver, B.C.; Oct., 1894, to Mar., 1895, assistant storekeeper,

North Bend and Kamloops, B.C.; Mar., 1895, to Sept., 1896, clerk and operator, Car Service and Fuel Department, Vancouver, B.C.; Sept., 1896, to Jan., 1899, chief clerk, Fuel Department, Vancouver; Jan., 1899, to Feb., 1903, chief clerk to General Superintendent, Vancouver; Feb. to Nov., 1903, Superintendent, District 4, Central Division, Souris, Man.; Nov., 1903 to Oct., 1909, Superintendent, District 3, Pacific Division, Nelson, B.C.; Oct., 1909, to Oct., 1911, Local Manager, Fraser Valley Branch, British Columbia Electric Ry., Vancouver; May, 1912, to Feb., 1915, Manager of Interurban Lines, same company, New Westminster, B.C.

**C. J. Smith**, who has been appointed Manager and Secretary, Montreal Warehousing Co., Montreal, was born at Hamilton, Ont., Mar. 10, 1862, and entered transportation service in 1879, since when he has been, to 1880, clerk in local freight office, Hamilton and Northwestern Ry., Hamilton, Ont.; 1880 to 1882, in Auditing and Purchasing Department, Chicago and Alton Rd.; 1882 to May, 1885, in Construction Department, C.P.R.; June, 1885, to 1886, in Traffic Department, New York, Lake Erie and Western Rd.; 1886 to 1888, chief clerk to General Manager, Chicago and Atlantic Ry.; Jan. to July, 1888, in Traffic Department, Minneapolis, St. Paul and Sault Ste. Marie Ry.; July, 1888, to Jan., 1890, in Traffic Department, St. Paul, Minneapolis and Manitoba Ry.; Jan., 1890, to Mar., 1898, General Freight and Passenger Agent, Canada Atlantic Ry.; Apr., 1898, to Mar., 1904, General Traffic Manager, Canada Atlantic Ry. and Canada Atlantic Transit Co., Ottawa, Ont.; Mar., 1904, to Mar., 1913, General Manager, Richelieu and Ontario Navigation Co., Montreal. In Apr., 1913, he was appointed Vice President and General Manager of the North Ry. Co., formed to build a railway from Montreal to James Bay, and to operate steamships from the latter place.

**Lacey R. Johnson**, M. Can. Soc. C.E., who has been appointed General Welfare Agent, C.P.R., Montreal, was born at Abingdon, Berks, England, June 22, 1855. He entered railway service as an apprentice at the Great Western Ry. works at Swindon, Wilts., June 1, 1870, and was a mechanic and Foreman of Mechanics at Woolwich Arsenal, Jan. to Aug., 1876, and fitter and erector, Sept., 1876, to Nov., 1878; Manager, Davis and Sons' engineering works, London and Abingdon, Nov., 1878, to Aug., 1879. In Sept., 1879, he went to India as draughtsman on the Scinde, Punjab and Delhi Ry., and was subsequently foreman of machine and erecting shops there. He left India on account of health in Mar. 1882, and entered G.T.R. service at Montreal as draughtsman, June, 1882, and joined the C.P.R., Nov., 1882, since when he has been, to Nov., 1885, General Foreman, Carleton Jct., Ont.; Nov., 1885, to May, 1886, Assistant Master Mechanic, Eastern Division, Chisleau, Ont.; May, 1886, to Apr., 1901, Master Mechanic, Pacific Division, Vancouver, B.C.; and from the commencement of the Transpacific service his jurisdiction was extended over the engineering department of the vessels, during which time he spent three winters in Hong Kong, China, superintending alterations and repairs to the company's vessels; Apr. to Sept., 1901, on the purchase of the Canadian Pacific Navigation Co. by the C.P.R., he was Superintending Engineer of the combined fleets, which position was severed from the locomotive and car department; Sept. 1, 1901, to July 1, 1912, Assistant Superintendent of Motive Power, C.P.R., Montreal; July 1, 1912, to Mar., 1915, General Superintendent, Angus Shops District, C.P.R., Montreal. He is Lieutenant-Colonel, Commanding the Montreal Heavy Brigade of Artillery.



## Transportation Appointments Throughout Canada.

**Canadian Northern Ry.**—E. G. THEOBALD, heretofore auxiliary foreman, has been appointed Car Foreman, Joliette, Que., vice J. Hodgson, transferred to Montreal.

J. HODGSON, heretofore Car Foreman, Joliette, Que., has been appointed Car Foreman, Montreal, vice R. Moore, assigned to other duties.

A. A. TAGGART, heretofore Locomotive Foreman, Brockville, Westport and Northwestern Ry., Brockville, Ont., has been appointed Locomotive Foreman, C.N.R., there.

S. J. HUNGERFORD, Superintendent Rolling Stock, Winnipeg, who is at present organizing the Universal Tool Steel Co.'s plant at Toronto, as mentioned elsewhere in this issue, is handling his department from his temporary office at 133 Dufferin St., Toronto.

A. H. EAGER, Superintendent of Shops, Winnipeg, is in charge of the Winnipeg office during Mr. Hungerford's absence.

A. HOPKIRK, Shop Engineer, Locomotive Shops, C.N.R., Winnipeg, is in Toronto for a time acting as Shop Engineer, Universal Tool Steel Co.

J. STINSON, heretofore Roadmaster, Brockville, Westport and Northwestern Ry., Brockville, Ont., has been appointed section foreman, C.N.R., North Bay, Ont.

L. WEDGE is acting General Foreman of Locomotive Shops, Winnipeg, during the absence of D. M. Galloway, who is acting Superintendent, Universal Tool Steel Co., Toronto.

**Canadian Pacific Ry.**—The President, Sir Thos. Shaughnessy, has issued the following circular: "In view of the benefits derived from certain voluntary agencies, such as the St. John Ambulance Association, the safety first movement, the Railroad Y.M.C.A., and athletic associations, I have decided to appoint an officer to co-operate in the development of such organizations amongst the employes of the C.P.R., with the title of General Welfare Agent. Lieut.-Col. LACEY R. JOHNSON, heretofore General Superintendent of Angus Shops District, who since he joined the service in 1882 has been actively identified with the general uplift of ideals and service among the railroad employes, will assume that office."

The position of General Superintendent, Angus Shops District, has been abolished.

JOHN McMILLAN, heretofore General Superintendent of Telegraphs, Western Lines, Winnipeg, has been appointed Manager of Telegraphs, Office, Montreal. In the circular announcing this, George Bury, Vice President, says: "James Kent, who has for so many years undertaken the duties of that office with such conscientious regard for the interests of the company and its patrons, has, at his own request, been allowed to relinquish those duties, and given leave of absence for an extended period."

C. VERNER has been appointed Roadmaster, Quebec East, St. Maurice Valley, Piles and Cap de la Madeline Branch, Office, Three Rivers, Que.

A. MERCIER has been appointed Roadmaster, Ottawa, St. Lin and Eustache Subdivisions, Office, Ste. Therese, Que.

C. T. DELAMERE, heretofore Assistant Engineer of Construction, has been appointed acting Engineer of Construction, during the absence of C. W. P. Ramsey, Engineer of Construction, who has been given extended leave of absence in order to take command of the Canadian Overseas Railway Construction Corps, Office, Montreal.

A. C. FRASER has been appointed Superintendent of Telegraphs, Eastern Division, vice F. J. Mahon, transferred to Saskatoon, Sask. Office, Montreal.

W. M. THOMPSON, heretofore Agent Telegraphs, Winnipeg, has been appointed

chief operator, Montreal, vice H. Bott, transferred to Toronto.

G. W. GEHAN, heretofore Storekeeper, Place Viger, Montreal, has been appointed



P 411  
Lt.-Col. C. W. P. Ramsey,  
Commanding Overseas Railway Construction  
Corps.



P 412  
W. Maund,  
Secretary-Treasurer, Timiskaming and Northern  
Ontario Railway Commission.

Storekeeper, Hochelaga, Que., vice G. H. Jobin, transferred.

G. H. JOBIN, heretofore Storekeeper, Hochelaga, Que., has been appointed Storekeeper, Place Viger, Montreal, vice G. W. Gehan, transferred.

H. J. LILLIE, heretofore Chief Operator, Toronto, has been appointed Superintendent of Telegraphs, Ontario Division, vice W. Marshall, promoted. Office, Toronto.

G. PATON, heretofore Assistant Agent, Telegraphs, Toronto, has been appointed Agent there, vice H. A. Shambrook, transferred to Calgary, Alta.

H. BOTT, heretofore chief operator, C.P.R. Telegraphs, Montreal, has been appointed chief operator, Toronto, vice H. J. Lillie, promoted.

ALLAN PURVIS, heretofore Manager, Interurban Lines, British Columbia Electric Ry., New Westminster, B.C., has been appointed Superintendent, District 2, Ontario Division, C.P.R., vice R. King, who has been granted three months leave of absence. Office, London, Ont.

W. MARSHALL, heretofore Superintendent of Telegraphs, Ontario Division, Toronto, has been appointed Assistant Manager of Telegraphs, Western Lines, vice J. McMillan, General Superintendent of Telegraphs, Western Lines, promoted. Office, Winnipeg.

R. RUSSELL, heretofore Assistant Agent Telegraphs, Winnipeg, has been appointed Agent there, vice W. M. Thompson, appointed chief operator, Montreal.

J. F. RICHARDSON, heretofore Superintendent of Telegraphs, British Columbia Division, Vancouver, has been appointed Superintendent of Telegraphs, Saskatchewan Division, vice D. Coons, transferred. Office, Moose Jaw.

D. COONS, heretofore Superintendent of Telegraphs, Saskatchewan Division, Moose Jaw, has been appointed Superintendent of Telegraphs, Alberta Division, vice R. N. Young, transferred. Office, Calgary.

H. A. SHAMBROOK, heretofore Agent Telegraphs, Toronto, has been appointed Agent Telegraphs, Calgary, Alta.

R. N. YOUNG, heretofore Superintendent of Telegraphs, Alberta Division, Calgary, has been appointed Superintendent of Telegraphs, British Columbia Division, vice J. F. Richardson, transferred. Office, Vancouver.

W. G. PAYTON, heretofore baggage master, Vancouver, B.C., has been appointed station agent there, vice S. Woods, appointed constable on pier D, there.

R. E. ALLINGHAM has been appointed baggage man at Vancouver, B. C., vice W. G. Payton, promoted.

**Edmonton, Dunvegan and British Columbia Ry.**—R. M. HALPENNY, heretofore Trainmaster, G.T. Pacific Ry., Edson, Alta., is reported to have been appointed Trainmaster, Edmonton, Dunvegan and British Columbia Ry.

**Grand Trunk Ry.**—W. J. TYERS has been appointed General Supervisor, Montreal Division, vice G. Dyson. Office, Montreal.

T. W. MASON, heretofore Trainmaster, Montreal, has been appointed Chief Dispatcher, Richmond, Que., vice E. C. Potter.

W. E. ALLEN has been appointed Passenger Agent, Brockville, Ont.

H. R. BULLEN, heretofore Soliciting Freight Agent, G.T. Pacific Ry., Regina, Sask., is reported to have been appointed Soliciting Freight and Passenger Agent, G.T.R. and G.T.P.R., San Francisco, Cal.

**Montreal Warehousing Co.**—C. J. SMITH, heretofore Vice President and General Manager, North Ry., Montreal, has been appointed Manager and Secretary, Montreal Warehousing Co., vice G. H. Hanna, deceased.

**Timiskaming and Northern Ontario Ry.**—W. H. MAUND, heretofore Travelling Auditor, has been appointed Secretary-Treasurer, vice A. J. McGee, deceased. Office, Toronto.

H. H. MCGEE, heretofore Assistant Auditor, has been appointed Travelling Auditor, vice W. H. Maund, appointed Secretary-Treasurer.



# Electric Railway Department

## Hydro Electric Railway Association of Ontario.

This association, which was organized last year, held its first annual meeting in Toronto, Feb. 26, several hundred representatives of municipalities throughout Ontario being present. Among the speakers were the Honorary President, Sir Adam Beck, Chairman of the Hydro Electric Power Commission of Ontario; the President, J. W. Lyon, Guelph; the First Vice President, Mayor Church, Toronto; and J. B. Detweiler, Berlin.

Sir Adam Beck said that the hydro electric scheme is now divided into two groups, power and radial railways. In reference to the latter he said:—"There are railways which have received subsidies amounting to the exact cost of their construction, and the promoters issued stock and pocketed the spoils. Assert yourselves, and declare that subsidies to private individuals must cease. We have sufficient transcontinental railways. Let us be in earnest. Tell those men you have sent to Ottawa and Toronto that they have been elected to serve you and not private interests. Call a halt to subsidies! Call a halt to land grants! Call a halt to all bonuses! If we must guarantee bonds, let us guarantee our own. As soon as the frost is out of the ground, we will proceed with the construction of 98 miles of radial lines to the northeast of Toronto. The whole of Canada is interested in this scheme, because it means so much, then let us get some assistance from Canada. You people from all parts of the province, never call Toronto 'hog town' again. The city council has assumed responsibilities which will prove of immense value to the whole province. With the help of the Federal Government it intends to spend \$19,000,000 on great harbor developments, and intends giving the hydro radials free access to the waterfront." He urged the delegates to work unceasingly in the interests of the hydro power and radial schemes.

J. W. Lyon urged an immediate canvass of the members of the Dominion Parliament and Ontario Legislature. "There is an election pending," said he. "It is your business to see every member and aspirant to office in this province and find out where he stands on this question. We are asking the Dominion for a subsidy of \$6,400 a mile. What is that compared to the \$230,000,000 granted in subsidies to private corporations, as well as land grants as big as the Maritime Provinces. We are going to make bold and back up our resolutions to the limit. Ontario has borne the brunt of these grants to private concerns; it is now her turn to be helped construct radials that will be owned by the people."

It was urged that if the Dominion Government is serious in its campaign for greater production it could not refuse the association's requests, because the construction of the radials would stimulate trade, improve business, provide employment, encourage rural settlement, increase production, reduce transportation rates, increase farmers' profits, reduce cost to consumers and increase national wealth. On this ground it was argued that a promise of subsidies could not be held up on pleas of war conditions.

The association's constitution was adopted as prepared. It provides that the objects are to develop a system of radial railways in Ontario, owned by the municipalities and operated for them by the Hydro

Electric Power Commission; to secure all necessary legislation and government aid in the furtherance of the enterprise; assist municipalities in carrying bylaws in connection with radials, and to prevent by lawful methods the renewals of private charters or issuance of new ones to individuals or corporations.

For organization purposes the province is divided into districts, as follows:—St. Lawrence district—counties east of Frontenac and west of Ottawa River. Kingston and Ontario district—Frontenac, Hastings, Northumberland and Peterboro' counties. Toronto East district—comprising York east of Yonge St., Ontario, Durham and Victoria counties. Toronto district—City of Toronto. Toronto West district—comprising York west of Yonge St., Peel, Halton, Wentworth and Simcoe counties. Hamilton district—Hamilton and Wentworth and Halton counties. Niagara district—Lincoln, Welland and Haldimand counties. Guelph and Georgian Bay district—Wellington, Waterloo, Dufferin and Grey counties. Erie East district—Norfolk, Elgin, Brant and Oxford counties. Erie West district—Kent and Essex counties. London and Huron district—Middlesex and Lambton counties. Stratford and Huron district—Perth, Huron and Bruce counties.

Officers were elected as follows:—Honorary President, Sir Adam Beck; Honorary Vice Presidents, Hon. I. B. Lucas, Attorney General, Province of Ontario, and W. K. McNaught, one of the Hydro Electric Power Commissioners; President, J. W. Lyon, Guelph; First Vice President, T. L. Church, Toronto; Second Vice President, C. M. R. Graham, London; Third Vice President, A. F. Wilson, Markham; Fourth Vice President, W. H. Buller, Peterborough. The following were elected district vice presidents:—1, F. S. Evanson, Prescott; 2, T. F. Matthews, Peterborough; 3, J. H. Downey, Whitby; 4, John O'Neill, Toronto; 5, R. H. Lush, Clarkson; 6, P. Ray, Waterdown; 7, G. B. Ryan, Guelph; 8, W. D. Euler, Berlin; 9, M. B. Johnston, St. Thomas; 10, W. C. Bush, St. Catharines; 11, H. Clay, Windsor; 12, R. Stirrett, Petrolia; 13, D. A. McLachlan, Stratford; 14, J. McQuaker, Owen Sound; 15, D. C. Barr, Collingwood. T. J. Hannigan, Guelph, was subsequently appointed Secretary, and G. P. Hamilton, Guelph, is Treasurer.

On March 10, a deputation from the association waited on the Dominion Premier in Ottawa, among those comprising it being Sir Adam Beck, J. W. Lyon, Mayor Church, Controllers Foster and Spence, Toronto; Mayor Buller, Peterborough; H. Clay, Windsor, and T. J. Hannigan, Secretary. The delegates, in addressing the Premier, asked for a subsidy of \$6,400 a mile for approximately 1,000 miles of railway.

After listening to the arguments advanced Sir Robert Borden expressed his appreciation of the additional information which had been placed before him, the delegation having gone into details of the proposal somewhat more fully than when the large deputation visited Ottawa last year, but he stated that owing to the outbreak of the war so soon after the 1914 session there had been little time or opportunity to give consideration to the suggestions which had been placed before the Government at that session. He also stated that the delegates' desire to have a definite statement of policy on behalf of the Government would be dis-

cussed with his colleagues, but that in the meantime no definite reply could be made, further than that it would be impossible to vote any subsidies this session.

Following the deputation's visit to Ottawa, various municipal corporations in Ontario were asked by the association to sign petitions to the Dominion Government urging an early announcement of policy in regard to requests for subsidies. At the time of writing (Mar. 22) arrangements have been made for a large deputation to wait on the Ontario Government, Mar. 26, to ask provincial subsidies of \$3,200 a mile.

The Niagara District Hydro Radial Union held its first annual meeting at Welland, March 19, and elected officers. T. J. Hannigan, Secretary, of the Hydro Electric Railway Association of Ontario, spoke. A resolution was passed urging the Dominion Government to grant a subsidy of \$6,400 a mile for hydro electric railways and to make an immediate announcement of its policy in this respect.

Sir Adam Beck stated in the Ontario Legislature recently that all the Hydro Electric Power Commission of Ontario's estimates for radial railways were based on the assumption that they would be given a Dominion bonus of \$6,400 a mile.

### The Montreal Tramway Situation.

Montreal's city solicitor has prepared a report upon the tramway situation there in conformity with resolutions passed in January, in the discussion arising upon a plan submitted by the mayor for terminating all existing franchises and replacing them by a new one to run 30 years. A summary of the mayor's proposals appeared in our Dec., 1914, issue, pg. 554. The solicitor's report, which was made public Mar. 12, is in two parts—the first dealing with the franchise granted by the city in 1892, for 30 years, and the second with the 23 separate franchises held outside the city. The several franchises are dealt with in detail, following which certain questions which were asked by the council are answered. The only way in which the original franchises granted to the Montreal St. Ry. in 1892, and to the Montreal Terminal Ry., by bylaw 274 and its amendments, can be abrogated is to purchase the lines under the terms of the bylaws. Certain of the franchises in the other districts appeared to have been granted in consideration of the fact that the company to which they were given had connection with the city lines; while in other cases there did not appear to have been any consideration of this kind. The report continues:—"The statements contained in the project submitted by the mayor, relating to the franchises belonging to the company and the reasons connected with the project are not altogether exact in fact or in law. It would not be prudent for the city to admit these statements as correct and to incorporate them in a resolution, or in a bylaw, or in a contract." (Feb., pg. 70.)

The Auto Public Service Co. of British Columbia, Ltd., Vancouver, is issuing The Jitney Press, as the official organ of the jitney service, and is distributing it free.



### Stores Card for Controller Segments in Montreal Tramways Stores Department.

The Montreal Tramways Co., in its main stores department at its Youville shops, has a unique system of locating and storing controller segments by means of a chart, a copy of which is shown herewith. The controller segments are used in only three sizes of drums, 4¼, 4½ and 5 ins. diameter, which are respectively given the symbols A, B and C. The developed controller drums for each type and size of controller are shown as indicated, with the segments in their respective positions with regard to each other.

The various segments are made in standard widths, most of which are 1 in. The lengths of the segments are usually in even eighths of an inch. To name the lengths, using the length in its whole and fractional parts of an inch, tends to introduce a chance of error when a requisition for a certain size is called for. To overcome this tendency towards error a system has been developed, using the actual length as a basis, whereby the length is denoted in a

Stock, Montreal Tramways Co., to whom we are indebted for the information.

### Proposed Legislation re Electric Railway Fares in Ontario.

During the Ontario Legislature's current session, M. H. Irish, M.L.A. for Northwest Toronto, introduced a bill, "An Act to Amend the Ontario Railway Act," reading as follows:

"1. Clause (a) of subsection 1 of section 210 of The Ontario Railway Act is amended by inserting after the word 'miles' in the fourth line thereof the words 'in any municipality other than an urban municipality.'"

"2. Subsection 1 of the said section 210 of the said act is further amended by inserting the following clause (aa) after clause (a) thereof:

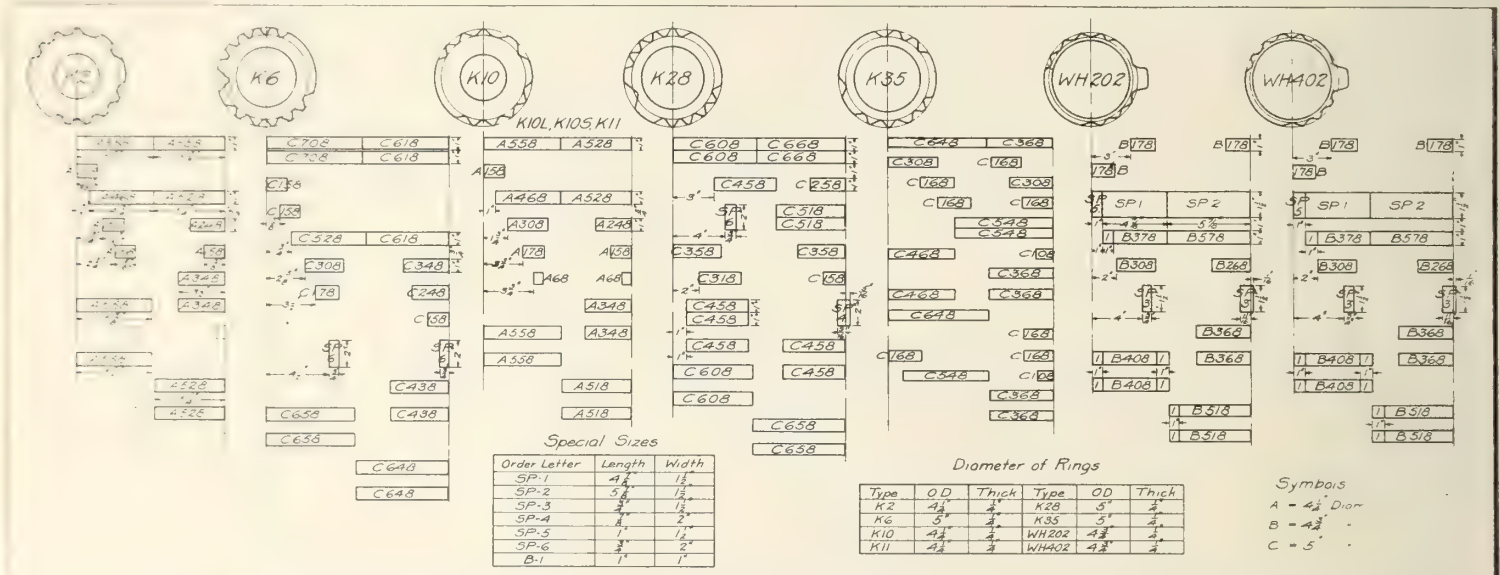
"(aa) The fare to be taken by a company on a railway operated by electricity for each passenger shall not exceed five cents for any distance in an urban municipality; and in the case of children under ten years of age shall not exceed three cents for any distance, but children in arms shall in all cases be carried free."

### Electric Locomotives for the London and Port Stanley Railway.

More detailed data of the three electric locomotives which are being built for the London and Port Stanley Ry., which were briefly described in Canadian Railway and Marine World for Nov., 1914, and Mar., 1915, are now available. The following are the principal particulars:—

Length inside of knuckles ..... 37 ft. 6 ins.  
Length over cab ..... 28 ft. 0 ins.  
Height over cab ..... 12 ft. 10 ins.  
Height with trolley down ..... 15 ft. 2 ins.  
Width overall ..... 9 ft. 7½ ins.  
Total wheelbase ..... 24 ft. 8 ins.  
Rigid wheelbase ..... 7 ft. 2 ins.  
Minimum radius of curvature ..... 75 ft. 0 ins.  
Weight, electrical equipment ..... 38,950 lbs.  
Weight, air brake and compressor ..... 4,670 lbs.  
Weight, mechanical equipment ..... 76,380 lbs.  
Weight, total ..... 120,000 lbs.  
Weight, on drivers ..... 120,000 lbs.  
Weight, per driving axle ..... 30,000 lbs.

The locomotives will each be mounted on two swivel equalized trucks, with cast steel truck transoms bolted rigidly to the steel side frames, and carried on semi elliptic springs, with the brakes inside hung. The wheels will be of solid rolled steel, 36 ins. diam., 5½ ins. wide, and 2½ ins. thick,



Stores Card for Describing Controller Segments and Position of Ratchet Wheels.

whole number. The system is simple. Each length is expressed in a whole number of three digits, the first of which denotes the even number of inches. As all the sizes are in even inches, with fractions as low as eighths, the latter is taken as the basis, quarters and halves being represented in eighths. One eighth would be represented by 18, one quarter by 28, one half by 48, and so on. This arrangement is combined with the whole number of inches of length. Thus, a segment, 3½ ins. long, would be represented by the number 348, and 4½ ins. by 458. This is better emphasized by the linear dimensions and symbols shown in the K2 controller. For the several diameters, the diameter symbol is also combined, for instance, a segment 3½ ins. long from a 4½ in. drum, would be called for by the number B328.

In this manner all the sizes are sifted down to a few different kinds, which are stored under these symbol numbers. When a repair part is required it is only necessary to give the symbol number on the requisition by referring to the accompanying sheet, no dimensions being required. The odd sizes, of which there are seven, are listed separately in a table, each given a special number. This arrangement is due to D. E. Blair, Superintendent of Rolling

The amendment proposed in section 1, above quoted, would have changed the Ontario Railway Act to read as follows, the proposed amendment being shown in bold-faced type:

"210.—(1) Notwithstanding anything to the contrary contained in any agreement with a municipal or other corporation or person or in any special Act,

"(a) the fare to be taken by a company on a railway operated by electricity for each passenger shall not exceed five cents for any distance not exceeding three miles in any municipality other than an urban municipality, and where the distance exceeds three miles shall not exceed two cents per mile or fraction thereof for the distance actually travelled; and in the case of children under ten years of age shall not exceed three cents for three miles or less, and where the distance exceeds three miles shall not exceed one cent per mile or fraction thereof for the distance actually travelled, but children in arms shall in all cases be carried free."

The bill was withdrawn after its first reading.

The Hamilton St. Ry. is preparing a revised traffic schedule, as the result of a conference with a subcommittee of the Hamilton, Ont., City Council.

with tread and flange 5½ ins. wide, M.C. B. 1909 contour. The axles will be 7 ins. diameter, with 5½ x 10 in. journals.

The platform framing will be built up of structural steel, longitudinal and cross sills, stiffened by brace plates, with a ¾ in. steel floor, covered with a ¾ in. wooden flooring throughout. The end frame will be a steel casting, secured to the platform centre and side sills. There will be friction draught gear with M.C.B. 5 x 7 in. shank, attached to the centre sills and end frame, at a height of 34½ ins. above the rail. The platform and coupler housing will be designed to withstand buffing strains equivalent to a 300,000 lb. static load applied at the drawhead.

The cab will be of the box type, 9 ft. 7 ins. x 28 ft., with an operating compartment at each end, and an apparatus compartment between, with the sides and ends built up of 1-8 in. steel, and a roof of no. 8 steel, the whole substantially rivetted to a frame work of steel angles. There will be doors at both ends of the cab, and in the bulkheads between the operating and apparatus compartments, made of wood, glazed with double thickness glass. Seats for the locomotive man and fireman will be provided at the operating positions. The safety appliances will conform to the Board



of Railway Commissioners' requirements. Each locomotive will have a steel tool box fully equipped, pneumatic sanders independently operated from either end, locomotive bell and two air operated alarm whistles.

Air will be supplied from two C.P. 30 air compressors in the cab, having a free air capacity of 35 cu. ft. per min. at 110 lbs. pressure on 1,500 volts. The brake equipment will be Westinghouse schedule 14 EL combined straight and automatic air, with two 28 x 60 in. main reservoirs, and a 16 x 12 in. air brake cylinder.

The motor equipment will consist of four GE 251 A 750-1,500 volt box frame single geared commutating pole railway motors, rated at 274 amperes on 750 volts, and suspended on the axle and by the motor nose on the truck transoms. They will operate on a gear ratio of 4.37.

The locomotives will be equipped with type M multiple unit control, with two controllers arranged for 10 steps, the motors connected all in series, or 7 steps, motors two in series, two such groups in parallel. Three locomotives may be operated in multiple. The collecting apparatus will consist of two pantographs, centrally located, pneumatically operated, with a variation in height from 15½ to 24½ ft. The pantographs are to be arranged for multiple unit control.

The maximum safe operating speed, limited by the bearings or commutation, will be 34 m.p.h.; and the maximum emergency speed, limited by the armature construction, will be 40 m.p.h. The maximum speed on a level tangent track will be approximately 24.5 m.p.h. with a 860 ton train. At a tractive effort 21,500 lbs., the locomotive will propel a train of 860 tons, including locomotive, up a 0.9% grade, tangent track, at 17.1 m.m.h. At a tractive effort of 30,000 lbs., it will accelerate a maximum train of 860 tons up a tangent grade of 1% at a rate of approximately 0.08 miles per hour per second, or 1.110 tons on a level tangent track at approximately 0.15 m.p.h. per sec.

### Bloor Street West Line, Toronto Civic Railway.

The temporary line for the Toronto Civic Ry. along Bloor St. West was opened for service on Feb 23 by the Mayor and other civic officials. The new service consists of a temporary single track line extending from Dundas St. to Quebec Ave., 0.745 mile, with a passing track at Keele St., midway in the line. The temporary line is laid with several sizes of rail, averaging about 60 lbs. The trolley wire is 2/0 round hard drawn copper. A temporary car barn, with accommodation for two cars, has been built. It is of frame construction, sheathed in galvanized iron sheeting.

It is the intention to proceed with the permanent double track line about Apr. 1, or as soon as the frost is out of the ground. This will be laid on oak ties, embedded in a concrete base. A 7 in. girder rail of the 122-467 Lorain section will be used. The overhead construction will be span, with 2/0 round hard drawn copper wire.

Power for the line is received over 350,000 cm. positive and negative feeders from the Toronto Hydro Electric System substation J, at the corner of Edwin and Ruskin Aves., about 3,000 ft.

The three single truck, double end operation, p.a.y.e. cars for this line, which are now in operation, were described in Canadian Railway and Marine World for February. They have 21 ft. bodies, with 6 ft. platforms, with an overall length of 34 ft., and are mounted on E21 trucks, equipped with two 40 h.p. Westinghouse motors, the cars completely equipped weighing 25,000 lbs. They have a seating capacity for

32 persons, with 8 cross seats and 4 longitudinal seats. They are being operated on an 8 minute headway. We are indebted to D. W. Harvey, Assistant Engineer, Works Department, for the foregoing information.

### Death of J. C. Rothery.

The dead body of J. C. Rothery, who, until a few months ago, was Manager of the Toronto Eastern Ry., which is under construction between Toronto and Bowmanville, was found on Mar. 10, imbedded in snow and ice near the G.T.R. bridge over Black Creek, near Weston, Ont., it having been noticed by the locomotiveman of a passing C.P.R. train. Mr. Rothery left his home in Weston on Mar. 3 for Toronto, and was not afterwards seen alive by his family. He was seen on the train between Toronto and Weston on the return journey, and the supposition is that he fell from the train and that the body was covered by the heavy snowfall and not observed until the thaw, which set in a few days later, had



The Late J. C. Rothery.

partly melted the snow. A coroner's jury returned a verdict of accidental death.

Mr. Rothery, who was about 60 years old, was born at Glasgow, Scotland, and went to sea at an early age. Subsequently he took a course in engineering and went into the electrical field. In May, 1893, he was appointed Superintendent, Niagara Falls Park and River Ry., and in 1902 was also appointed Superintendent of the International Ry.'s Buffalo and Niagara Falls Division. He also had charge of the upper steel arch bridge at Niagara Falls, and the Queenston and Lewiston bridge, the construction of both of which he supervised. In Dec., 1905, he went to East Liverpool, Ohio, as General Manager of the East Liverpool Traction and Light Co., and in June, 1909, removed to Chester, W. Va. In 1910 he returned to Canada and was appointed Manager of the Toronto and Eastern Ry., and was engaged on other electrical railway propositions, etc., in the Mackenzie and Mann interests.

He took a prominent part in the Canadian Street Railway Association's meetings prior to leaving Canada in 1905, and was well

known by electric railway officials throughout the Dominion and a considerable portion of the United States. He was an expert diver and swimmer, and is said to have been the only man who dived successfully from the Queenston-Lewiston bridge into the Niagara River.

### Toronto and York Radial Railway Power for Newmarket.

An enabling bylaw was passed by the ratepayers of Newmarket, Ont., on Feb. 22, by a majority of 178, for the consummation of a contract with the Toronto and York Radial Ry. for furnishing power. The contract is for 5 years, renewable at the end of that time by the town for a further 5 years, at the following rates: \$25.50 a horse power a year for a maximum demand of 500 h.p.; \$25 a h.p. a year, up to 750 h.p.; \$24.50 a h.p. a year, over 750 h.p.; payable monthly on the basis of the highest peak during each month having a duration of not less than 20 consecutive minutes. The power will be delivered from the railway substation in Newmarket, to the town lines at 4,200 volt a.c., 3 phase. At the town power house it will be stepped down to 550 and 110 volts, for industrial, street lighting and commercial purposes. The railway receives its power at 24,000 volts from the Niagara substation at Toronto, transmitting at that voltage to Newmarket, where it is stepped down to 4,200 volts.

In 1912 the same proposition was offered the town, but it was defeated at the polls by 21 votes. Conjointly with the latter offer the company offered the town power at 12,000 volts for \$23.50 a horse power a year. At the same time the Hydro Electric Power Commission of Ontario offered the town power at 13,000 volts at \$26.98 a h.p. a year, up to 500 h.p., on a monthly bill of 75% of the contracted 500 h.p. This offer was subsequently revised to \$24.78 a h.p. a year on the same basis. No action was taken by the town on these high voltage propositions.

Newmarket is unique in the electric lighting field, it being claimed that the first municipal electric lighting plant in Ontario was installed there 21 years ago.

**Grand Valley Ry. Operation.**—The City Solicitor of Brantford received, Mar. 10, an order from the Board of Railway Commissioners authorizing the city to operate the Grand Valley Ry. This order was necessary as the G.V. Ry. was built and is operated under a Dominion charter. The order will only be in force until the end of the next session of the Dominion Parliament, at which time the City Council will apply for the necessary Parliamentary authorization to operate the G.V.R.

**Port Arthur Electric Ry.**—The ratepayers voted, Mar. 5, in favor of a bylaw vesting in a Public Utilities Commission the control and management of the street railway, the telephone system, and the Current River power plant, owned by the city. This Commission has been appointed under the provisions of chap. 204 of the Revised Statutes of Ontario, 1914, and the passing of the bylaw formally vests the control of these utilities in the hands of the Commission. (Jan., pg. 28.)

**St. John River Hydro Electric Co.**—The New Brunswick Legislature is being asked to revive the act of incorporation of 1912, under which the company was incorporated, with power to acquire and develop a water power on the St. John River at Pokiok, and to build the necessary works for the transmission of power.



## The City of Toronto's Attempt to Override the Privy Council Frustrated.

At the Ontario Legislature's current session a bill was introduced at the instance of the Toronto City Council which had it been passed would have overridden judgments given by the Judicial Committee of the British Privy Council and which were in favor of the Toronto Suburban Railway Co. and the Toronto Railway Co. The bill's principal provisions were as follows:—

The true meaning of the agreement dated Sept. 4, 1899, between the Township of York and the Toronto Suburban Ry. Co., is that the company is obliged to keep clean and in proper repair and to construct a new roadway or pavement on that part of Bathurst St. and Davenport Road, occupied by and between the company's rails, and for 18 ins. on each side of the rail or rails, such new roadway or pavement to be of a character similar to that constructed or to be constructed upon the other portion of the said highways by the municipality, and that in default of the company keeping clean and in proper repair and constructing a new roadway or pavement when requested to do so by the City of Toronto, the same may be done by the city at the company's expense.

The word "tracks" wherever mentioned in the said agreement shall cover or include the roadway or roadbed on which the rails are placed between the said rails and 18 inches outside of each rail.

The City of Toronto may expropriate and take that portion of the Toronto Suburban Ry. within the limits of the city and of the real property within the city limits in connection with the working thereof and such personal property in connection therewith as the Ontario Railway and Municipal Board may fix that the city should take, upon payment of the value of the same to be determined by arbitration by the Ontario Railway and Municipal Board under the provisions of the Ontario Railway Act, and in determining such value the franchise or control of tracks upon the highways shall not be estimated as of any value whatever.

All the rights and privileges of the Toronto Suburban Ry. Co. to operate railways, or to exercise any other franchise rights within the City of Toronto, are hereby cancelled and forfeited.

The proper construction of the agreement entered into between the City of Toronto and G. W. Kiely and others, dated Sept. 1, 1891, and the award, conditions and bylaw in connection therewith, is that in respect to what new lines shall be established and laid down and tracks and services extended thereon by the company, whether on streets in the city as existing at the date of the agreement or as afterwards extended, it is for the city and not for the railway company to determine, decide upon and direct, and in the manner prescribed by clause 14, of the conditions of the said agreement what new lines shall be established and laid down and tracks and services extended thereon by the company, whether on streets in the city as existing at the date of the agreement or as afterwards extended, and further that the privilege to the city to grant to any person or company for failure of the company to establish and lay down new lines and to open same for traffic, or to extend the tracks and service upon any street or streets as provided by the agreement, is not the only remedy the city can claim, but that the city, in addition to the remedies provided by statute and otherwise may, in the event of the company failing to establish, lay down and operate any new lines as provided in the said clause 14 within such period as is fixed by bylaw as

aforsaid, construct, lay down, and operate such line or lines, and the company shall pay the cost of such construction and operating, and the city may collect such cost of construction and operation by distress on the property of the company, and may impose a penalty upon the company of \$1,000 a day for failure to comply with the requirements of any such bylaws as above provided for.

The Toronto Ry. Company shall construct and equip 13 miles of new track within the City of Toronto, and shall build, equip and place in operation upon its system of street railways within the city 180 new cars, in order to afford an adequate and proper street car accommodation for the citizens.

The bill was rejected by the Legislature Private Bills Committee, Mar. 23. The Chairman of the Committee, Attorney General Lucas, objected to the bill principally on account of its object being to nullify Privy Council decisions, but intimated that an amendment to the Ontario Railway and Municipal Board, Act might be introduced to give the Board more extensive powers in dealing with disputes between electric railway companies and municipalities.

### Winnipeg Electric Railway Annual Report

The report for the calendar year 1914 shows gross earnings from all sources of \$4,101,302.48, against \$4,078,694.75 for 1913. The expenses of operation, including maintenance, repairs and renewals, were \$2,416,208.93, against \$2,252,606.77 for 1913. The net earnings from operation were \$1,685,093.55, a decrease of \$140,994.43. Of this amount the fixed charges, including 5% on gross earnings payable to the City of Winnipeg, interest on funded debt and other fixed charges, absorbed \$690,482.43, leaving a surplus for the year of \$994,611.12, to be added to the balance brought forward from 1913 of \$901,697.99, making together \$1,896,309.11. The usual quarterly dividends, at the rate of 12% per annum, were paid, amounting to \$1,080,000.00, leaving a balance at the credit of profit and loss of \$816,309.11. The properties were fully maintained from revenue throughout the year. The increase in the operating expenses, which occurred principally in the railway department, is attributable partly to expenditure introduced in conformity with the requirements of the Public Utility Commissioner, and partly to the annual increase in the graduated scale of wages applicable to senior service employees.

To meet growing requirements new construction and improvements and betterments were carried out, entailing an expenditure of \$1,308,545.00. About 7½ miles of track were laid in Winnipeg, as follows:—4.192 miles with 80 lb. rails with concrete foundation and asphalt pavement; 3.33 miles of surface track with gravel ballast, which includes an extension through Fort Garry Municipality, to St. Norbert Village. A branch line was built from Middlechurch on the Winnipeg, Selkirk and Lake Winnipeg Ry., a subsidiary line, to Stonewall, 18 miles, and a fast electric car service has been established between Winnipeg and Stonewall. This has increased the mileage of the Winnipeg, Selkirk and Lake Winnipeg line to 40 miles.

Twenty large double truck closed motor cars, 46 ft. long with wide vestibules, equipped with air brakes and other modern appliances, were constructed in the company's shops. Practically all of the double truck

closed single end cars have been converted to comply with operating conditions under the p.a.y.e. system. The rear vestibules have been equipped with safety doors at the steps, which are operated by the conductor. By this means it is hoped that accidents will be largely diminished.

To provide for the foregoing capital expenditures, the directors sold additional 4½% consolidated debenture stock, the proceeds of which amounted to \$879,468.59, and treasury notes for \$500,000, in all \$1,379,468.59.

The number of passengers carried was 58,489,987, a decrease of 1,073,770 from 1913. Transfers numbered 20,277,197, an increase of 5,238,181.

The percentage and car license paid to the City of Winnipeg was \$122,486.90, and the taxes, insurance, etc., \$118,263.

The Winnipeg, Selkirk and Lake Winnipeg Ry., a subsidiary company, gross earnings were \$136,665.45; gross expenses, \$72,884.06; net earnings, \$63,781.39; less interest on bonds, \$20,000; taxes, \$31,067.26 leaving a surplus for the year of \$12,714.13, and bringing the profit and loss balance to \$60,919.83.

The Suburban Rapid Transit Co., another subsidiary, had gross earnings of \$84,927.78; gross expenses, \$64,688.21; net earnings, \$20,239.57. Interest on bonds was \$25,000, and taxes, etc., \$2,459.61, making a deficit for the year of \$7,220.04 and increasing the profit and loss debit to \$74,391.16.

The directors of the W.E.R. Co., who were re-elected, are:—Sir Wm. Mackenzie, President; A. M. Nanton, Vice President; F. M. Morse, Sec.-Treas.; Sir Wm. Van Horne, Sir Donald Mann, D. B. Hanna, G. V. Hastings, Hugh Sutherland, R. J. Mackenzie. The Manager is Wilford Phillips.

### Effect of Jitney Competition on the British Columbia Electric Railway.

The B.C.E.R. Co.'s directors issued the following circular to shareholders recently:

"The directors draw attention to the very serious traffic decrease, which they regret to say they are advised by cable is likely to be still more severe for February and following months. It is largely due to a novel form of competition which has suddenly sprung up as a result of the bad times through which the country is passing, and which is costing the company the loss of traffic amounting to between \$2,500 and \$3,000 a day.

"A few weeks ago a large number of private motor cars, mostly driven by their owners, started plying for hire in opposition to this company's cars, at ordinary tram fares. They are able to compete on a very unfair basis, as the railway has to submit to extremely rigid regulations for the comfort and safety of the public, whereas the motor cars are at present absolutely uncontrolled. This competition is general in all cities on the Pacific Coast. The following cable on the subject has been received from the General Manager:

"In common with all other street railways on the Pacific Coast our transportation is very seriously affected by competition with passenger motor cars, mainly due to exceptional conditions obtaining and number of second hand motor cars on the market. While it is improbable this particular form of competition will prove permanent, the unlooked for development of this new traffic has created a situation which, unless the new traffic is made subject to regulations similar to those governing the street railway, will make it impossible to continue payment of dividends. The matter has been submitted to the municipal authorities for the purpose of receiving fair and reasonable treatment at their hands."



## Electric Railway Projects, Construction, Betterments, Etc.

**Brantford Municipal Ry.**—The station building in Brantford, Ont., is rapidly approaching completion. The old building is being retained in its main outlines, but is being strengthened, and the entire interior rearranged. The entrance will be by a new arch. On the main floor there will be provided general and women's washing rooms, ticket office, manager's office, and board room on one side of the hallway, and on the other a baggage room. The cars will be run in on the south side of the building, which is 83 ft. long, so as to prevent any stoppage on the main line.

The Commissioners have decided in favor of a loop line round Eagle Place, and it is said that construction will be started as soon as the arrangements can be made. (Mar., pg. 108.)

**Hamilton St. Ry.**—A subcommittee of the Hamilton, Ont., City Council is discussing with the company the question of track extension to the southwestern parts of the city, and the renewal of the tracks on York St. (Mar., pg. 108.)

**London and Port Stanley Ry.**—The London Railway Commission has submitted plans to the Board of Railway Commissioners for electrifying the L. & P.S. Ry.'s right of way into the G.T.R. station in London. Sir Adam Beck states that the L. & P.S. Ry. has the right to run into the station for 99 years, more than half of which period is unexpired.

**Moncton Tramways, Electricity and Gas Co.**—A petition has been presented to the company asking that its railway be extended from Moncton, N.B., to Fox Creek. A number of farmers along the route have promised contributions of from \$50 to \$100 each towards the cost of construction. The local officers of the company are said to view the extension with favor, and petitioners have forwarded the petition to the head office at Pittsburg, Pa. (Dec., 1914, pg. 553.)

**Montreal Tramways Co.**—The Quebec Legislature has extended the time within which the Town Council of Mount Royal may enter into agreements for the construction of electric lines in that town with the M. T. Co., or its subsidiary, the Public Service Corporation. (Feb., pg. 70.)

**Niagara, Welland and Lake Erie Ry.**—The Ontario Legislature is being asked to confirm an agreement between the company and the town of Welland, under which the amount payable by the company for paving the streets on which the railway is to run, shall be payable by instalments spread over 20 years. The town will issue debentures for the whole amount, the company's share of interest and sinking fund is fixed at \$2,700 a year until 1919, \$2,900 a year for the next five years, \$3,100 a year for the third five years, and \$3,350 a year for the last five years. These payments are to cover all taxes except school rates upon the company's property. (Feb., pg. 70.)

**Ottawa Electric Ry.**—The City Council has appointed a special committee to consider the construction of a bridge on Pretoria Ave., to permit of the extension of the electric railway to Ottawa East.

The company has completed the installation of a 2,150 h.p. generator set in its new steam auxiliary power station on Middle St. (Feb., pg. 70.)

**Three Rivers Traction Co.**—It is stated that construction on the loop line in Three Rivers, Que., with a connection to the waterfront, will be started as soon as weather permits and that it is hoped to have the line in operation this year. It is also stated that Geo. Anderson, Superintendent of the North Shore Power Co., will also

be Superintendent of the Three Rivers Traction Co. It is proposed ultimately to build a line connecting the parishes on the north shore of St. Maurice River from Portneuf to Berthier, about 80 miles. (July, 1914, pg. 336.)

**Toronto Suburban Ry.**—Work has been started on the foundations of the piers for the bridge across the Humber at Lambton Mill. Ewan Mackenzie is the contractor. Men are getting things in readiness from Islington westerly to get the section of the line on which track has been laid completed for operation, and for continuing tracklaying, ballasting and other work.

A permit has been taken out at Guelph, for the erection of a transformer station at a cost of \$4,500. Tenders have been invited, and it is said that the building will be completed as speedily as possible. (Feb., pg. 71.)

**Tramways, Limited.**—The directors of the company have passed a resolution setting forth that the company will not at any time claim that the City of Edmonton, Alta., must build connecting lines. The agreement between the city and the company was turned over to the company as soon as the above resolution was filed with the city clerk. While the agreement was approved by a large majority of the ratepayers at the recent elections, it did not receive the necessary two thirds majority to make it effective. (Mar., pg. 108.)

**Transcona, Manitoba.**—As the result of a hearing before the Manitoba Public Utilities Commission J. H. Kern was given time, on Mar. 3, to decide whether or not he will carry out his agreement for the building of an electric railway in Transcona. The conditions which he must accept or reject are: 20% of the line is to be completed by June 1; 40% by July 1; 60% by Aug. 1; 80% by Sept. 1, and the whole to be completed and in operation by Oct. 1. It is provided that the Transcona Town Council may appeal to the Public Utilities Commissioner at the end of each month as to whether the contractor has completed the portion of road called for; and further that the standard of construction, and the system of operation shall be the same as in Winnipeg. During the course of the proceedings it was stated that W. J. Christie, G. M. Newton, W. Chambers and E. Kern, of Winnipeg, were associated with J. H. Kern in the financial arrangements for the building of the line. Mr. Kern stated that in all probability a free right of way along Regent St. would be arranged by May 1. Another matter involved is the building of a line on Talbot Ave., by the Winnipeg Electric Ry., to connect the lines of that system with the Transcona line. The Transcona Town Council was recommended to take up the question of this extension with the Winnipeg City Council and the Winnipeg Electric Ry. Mr. Kern and his associates are applying to the Manitoba Legislature for the incorporation of a company to carry out the agreement. (Mar., pg. 108.)

**Winnipeg Electric Ry.**—We are officially advised that the question of the extension of the line to Morse Place has been considered by the Manitoba Public Utilities Commission at different times, but that no definite decision has been reached about it. (Mar., pg. 108.)

In mixing the solutions for lead storage batteries, always pour the acid into the water, as if this process is reversed, the heat generated by the acid will cause the mixture to splutter, and it will be very apt to be splattered on the attendant.

## Mainly About Electric Railway People.

**J. P. Verner**, Superintendent, Brantford Municipal Ry., is reported to have resigned.

**Thomas Ahearn**, President, Ottawa Traction Co., Ottawa, has been elected a director of the Bell Telephone Co. of Canada.

**J. H. Larmouth**, Superintendent, Edmonton Radial Ry., addressed the Edmonton, Alberta, Civic Club recently on street railway transportation problems.

**J. W. Wallace**, a Toronto Ry. roadmaster, died suddenly, from heart failure, in the street, at Toronto, Mar. 20. He had been in the company's service for several years.

**E. L. Cousins**, Chief Engineer, Toronto Harbor Commission, has been granted leave of absence to prepare plans for a rapid transit system and radial entrances for Toronto.

**James D. Fraser**, Director and Secretary-Treasurer, Ottawa Electric Railway, and Vice President, Canadian Electric Railway Association, had a ten days outing in March in the Gatineau country, north of Ottawa.

**W. G. Ross**, formerly Managing Director, Montreal St. Ry., and now Chairman, Montreal Harbor Commissioners, has been re-elected President of the Asbestos Corporation of Canada.

**W. H. Hazlett**, who retired recently from British Columbia Electric Ry. service, after 15 years, latterly as Purchasing Agent, has joined the firm of A. G. Langley & Co., engineers and contractors, Vancouver.

**R. J. Fleming**, General Manager, Toronto Ry., owns and operates a 900 acre farm in Pickering Tp., about 30 miles from Toronto. This year about 700 acres will be under crop. A considerable number of cattle are kept, chiefly Jerseys, and heavy horses are bred.

**H. L. Beach**, who was associated with Bion J. Arnold, of Chicago, in connection with the appraisal of the Toronto Ry. property, when it was proposed that the city of Toronto should buy out the company, has been appointed Manager, Utah Light and Traction Co., Salt Lake City, Utah.

**R. R. Hamilton**, of Winnipeg, was appointed Superintendent of the Saskatoon Municipal Ry. by the City Council of Saskatoon, Sask., Mar. 15, at a salary of \$150 a month, the appointment to be held during the Council's pleasure. He took up his duties at once.

**Sir John Gibson**, Director, Dominion Power and Transmission Co., Hamilton, and ex-Lieutenant-Governor of Ontario, received word Mar. 10 that his son, Lieut. Colin Gibson, had been wounded in active service and was in a military hospital at Hazebruck, France. His condition was regarded as quite satisfactory.

**Charles Avery Lee**, who has been appointed Purchasing Agent, British Columbia Electric Ry., Vancouver, was born at Colorado Springs, Col., Sept. 11, 1882, and entered B.C.E.R. service March, 1909, since when he has been, to July, 1910, Assistant Engineer, Vancouver; July, 1910, to Sept., 1911, Engineer in charge of Coquitlam Dam, Coquitlam; Sept., 1911, to Sept., 1912, Assistant Engineer, Vancouver; Sept., 1912, to Dec., 1914, Engineer in charge of Jordan River power development.

**Geo. Saunders**, who has been with Mackenzie, Mann & Co. at their Toronto office, in charge of their Mount Royal, Montreal, and Leaside, Toronto, terminal and town-site properties, and who formerly spent a number of years in Mexico, has been appointed Official Representative of the Monterey Ry. Light & Power Co. and its subsidiary companies, with office at Monterey, Mexico. Under the Mexican laws all foreign companies operating there must have a resident official representative in that country, with power of attorney and full authority



y to act. The M. R. L. and P. Co. operates all the street railway lines in Monterey, and also has electric light, power, gas, water-works, sewerage, and farm lands concessions. Its other officers are Sir William Mackenzie, President; Sir Donald Mann,

First Vice President; L. Lukes, Second Vice President and General Manager; R. P. Ormsby, Secretary and Treasurer, and R. G. O. Thompson, Auditor, all of Toronto. The local manager and purchasing agent at Monterey is E. Leonarz.

## Answers to Questions on Electric Railway Topics.

Following are questions submitted to the American Electric Railway Association's question box, with replies thereto by Canadian electric railway officials:

**Drying Out Car Motors.**—What methods have been used for drying out car motors, after same have been subjected to water due to floods or other cause?

W. R. McRae, Master Mechanic, Toronto Ry.—Since the introduction of impregnated field coils we have not had any trouble of this nature. All motor cases have a hole drilled in them to allow water to get out quickly.

**Trolley Wheels.**—What size and weight of trolley wheels do you use, for city service and for interurban service?

W. R. McRae, Master Mechanic, Toronto Ry.—Trolley wheels  $4\frac{1}{2}$  ins. diam., and  $3\frac{1}{4}$  lbs. weight used for both city and interurban service.

What tension do you maintain trolley wheel on wire, in city service, and in interurban service?

W. R. McRae, Master Mechanic, Toronto Ry.—In city service, four motor equipment, 23 to 25 lbs.; two motor equipment, 18 to 20 lbs.; in interurban service, all four motor equipments, 35 lbs.

**Balancing of Armatures.**—In regard to balancing of armatures used in regular city and interurban work, (a) Is any special attention given to the mechanical balancing of armatures? (b) Are armature cores balanced before rewinding? (c) Are armatures balanced after being rewound? (d) What method is used to determine whether or not an armature is out of the balance? (e) What method is used to correct an armature that is found to be out of balance after being rewound? (f) Have any decidedly injurious results been observed from armatures being out of balance?

W. R. McRae, Master Mechanic, Toronto Ry.—(a) Yes. (b) Yes. (c) No. (d) Straight edge levelling rails. (e) This is done before winding by boring holes in end plates, or by leading in existing holes. (f) Yes. Short life bearings, and pinions worn unevenly.

D. E. Blair, Superintendent Rolling Stock, Montreal Tramways Co.—We have found that the manufacturers of railway motors are very careful in the balancing of armature cores, and do not know of any serious results following the unbalancing that would result from slightly unsymmetrical position of the cores.

**Cast Iron vs. Steel Wheels.**—Is it not true that for purely city surface operation under a medium weight car, high grade cast iron wheels are cheaper than steel wheels?

W. R. McRae, Master Mechanic, Toronto Ry.—High grade cast iron wheels have given the best results on this property.

D. E. Blair, Superintendent Rolling Stock, Montreal Tramways Co.—We have found that high grade cast iron wheels with flange 1 13-16 ins. thick are considerably more economical than steel wheels, and quite satisfactory for city service and moderate speed on suburban lines.

**Inter-departmental Charges for Use of Tools.**—I should be pleased to learn what is the practice among other railways in the motive power or equipment department, as to charging other departments in the same company, a percentage for the use of tools, machinery and supervision for work done for such other departments. It occurs to

the writer that such a percentage charge is permissible, legitimate and only fair. If you are going to do some work for a neighboring factory or some other friendly company, you would not hesitate to charge them a certain percentage for use of machinery and supervision. When the tools are in the mechanical department, the mechanical department must replace them and naturally the costs are chargeable to the accounts of that department. When it becomes necessary to replace worn out tools and machinery, you would not think of assessing other departments of the company, such as have had work done in the mechanical department, therefore, I think it is only fair a reasonable percentage should be added to the cost of doing the work. What is your practice and opinion on the subject?

D. E. Blair, Superintendent Rolling Stock, Montreal Tramways Co.—It is not our practice to charge other departments with a percentage above the cost of work done in the shops of the mechanical department when same is chargeable to maintenance account, but we do consider that work done for capital account should carry its fair share of the overhead expense. The amount charged is arrived at by us by figuring the proportion of all legitimate overhead expenses and the total amount of labor and material charged to the shops. Otherwise we could not arrive at the actual cost of new work.

## Regina Municipal Railway Operations.

The operations for February show total revenue of \$14,456.02; operating expenses, \$14,344.90; capital charges, \$9,137.58; operating surplus, \$111.12; deficit, \$9,026.46, compared with \$18,009.14 total revenue; \$21,444.19, operating expenses; \$8,691.42, capital charges; \$3,435.05, operating deficit; \$12,126.47, total deficit for Feb., 1914. The aggregate total revenue for two months ended Feb. 28 was \$29,931.50; operating expenses, \$32,310.77; capital charges, \$18,275.15; operating deficit, \$2,379.27; total deficit, \$20,654.42. The passengers carried in February were 289,421, against 403,081 in Feb., 1914, and the aggregate passengers carried for the two months ended Feb. 28, were 613,105. The average expenses per car mile, excluding power costs, for February, were 14.75c.; average expenses per car mile, including power costs, 19.72c.; cost of power per k.w.h., 2.03c.; cost of power per car mile, 4.97c.; wages of motormen and conductors per car hour, 72.56c. The percentage of expenses, without capital charges, to earnings, was 99.23, and with capital charges, 162.44.

**Zone Fares for Saskatoon.**—At a meeting of the Saskatoon, Sask., City Council, Mar. 15, Electrical Engineer Hanson submitted a proposition to divide the various routes on the municipal electric railway into stages, and that the fare for each stage be 1c. The following are the routes, with the number of stages on each:—Pheasant Hill and Exhibition, eight stages; Avenue H., one stage; Mayfair and University, six stages; Seventh Ave. and Nineteenth St., three stages; Sutherland line, four stages to city limits, and full five cent fare from city limits to Sutherland. The proposition was laid over for future consideration.

## Yard Cranes for Wheels in Dominion Power and Transmission Co's. Shops

The accompanying illustration shows a yard crane used in the Dominion Power and Transmission Co's shops at Hamilton, Ont., for lifting car wheels from the adjacent storage pile. Prior to the use of this crane several men were required when it was necessary to lift wheels from the storage pile to a truck for running into the shop. With the arrangement one man can handle the work more expeditiously alone than several men formerly did.



Crane for Lifting Car Wheels in Yard.

The crane consists of a light jib of  $1\frac{1}{4}$  in. round iron, mounted on a post. On the outer end of the jib there is an arm about 12 ft. long, supported on a 3 to 1 ratio, with a hook and chain on the short end. This gives sufficient leverage to lift the wheel well clear of the ground for swinging from the storage pile, which is to the rear of the post, out into the foreground for lifting on trucks. This crane has been installed by J. O. Binkley, Superintendent of Shop, to whom we are indebted for the information.

## The Toronto Railway and the Overcrowding Bylaws.

In the article on overcrowding on the Toronto Ry. in Canadian Railway and Marine World for March, reference was made to the company's application to the Ontario Railway and Municipal Board for approval of its bylaw to limit the capacity of its cars to 50% above their seating capacity. This bylaw is in accordance with the city bylaw under which a conviction was obtained against the company last year for overcrowding. At a meeting of the Toronto Board of Control, Mar. 3, it was proposed to repeal the bylaw limiting the standing room to 50% of the seating capacity; to enter opposition to the company's application for approval of its bylaw, which is on precisely the same lines, and to urge the Attorney General to proceed with the cases against the company for overcrowding.

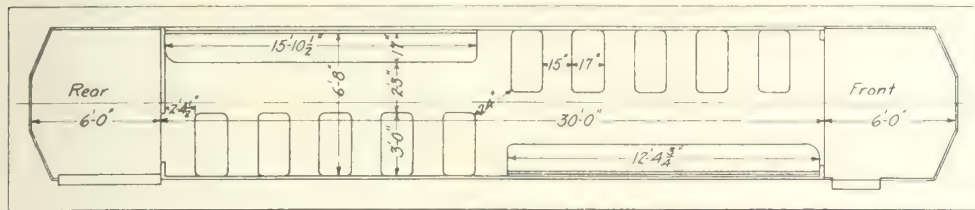
The Ontario Railway and Municipal Board has approved a draft of the bylaw, on condition that it be redrafted, and that it is not to become operative until a date to be fixed, and that the company adopt a device to show that the cars are full. On the question of a conviction for overcrowding, made in Nov., 1914, sentence was suspended pending the disposition of a stated case in the Appeal Court.

**Wentworth St. Incline Ry., Hamilton.**—Plans have been under consideration for some time for the improvement of the Wentworth St. Incline Ry., Hamilton, Ont., but it was decided, Mar. 5, that the carrying out of the suggestion would interfere injuriously with the Toronto, Hamilton and Buffalo Ry. tracks. It was decided to have new plans prepared.



## Cross Seated Cars for Operation on the Toronto Railway.

The Toronto Ry. has equipped seven of its standard cars with cross seats, and is now trying them on its lines. In the report on the traction improvement and development of the Toronto metropolitan district, submitted to the city by Bion J. Arnold, of Chicago, in 1912, cross seated cars were among the recommendations. Owing to the narrow devil strip between the tracks on the Toronto streets, the cars as used by the Toronto Ry. are of necessity about a foot narrower than those on most of the larger systems in Canada and the United States. In consequence, a difficult problem was presented in planning the seat layout to introduce the cross seat and at the same time provide a satisfactory aisle, with the nar-



Cross Over Cross Seated Car on the Toronto Railway.

rower width of car body, as even with the wider car the aisle width is considered none too great.

In the Arnold report the cross over seat layout shown herewith was suggested as a possible means of meeting the difficulty. Six of the cars have been arranged in this manner, and a seventh is provided with a narrow centre aisle the length of the car, as shown in the other car. The cars with the cross over aisle have a body length of 30 ft. with 6 ft. platforms at each end, with no bulkhead at the front. The outside car body width is 7 ft. 8 ins., and the inside width, 6 ft. 8 ins. The cross seats, of which there are 10, are 3 ft. long, and are of a wooden construction, non reversible. Opposite each set of 5 seats there is a longitudinal seat, 12 ft. 4 3/4 ins. long in front, and 15 ft. 10 1/2 ins. long at the rear, leaving an aisle width of 2 1/4 ft., which is reduced by the feet of the passengers sitting on the longitudinal seats. The six cars equipped in this manner are of the older standard type. They have seating capacity for 40 persons.

The seventh car, which has the through central aisle, is of the latest or 2,000 type of car, with the same body length of 30 ft., but with an inside width of 7 ft., a 6 1/2 ft. platform in front, and a 7 ft. platform in the rear, with no front bulkhead. In the centre of the body there are on each side 8 reversible rattan cross seats, each 2 ft. 8 ins. long and 19 ins. wide, at 2 1/2 ft. centres, leaving an aisle width of 20 ins. In the short body space at each end two short longitudinal seats are provided. The 20 in. aisle width was the governing factor, necessitating a short seat. The seating capacity of this car is 42 persons.

These cars were first tried on the Dundas St. route, and afterwards changed to the King St. line. It is the intention to give them a thorough trial before adopting any policy with regard to changing any more of the equipment.

The Detroit United Ry. is stated to have issued an order that Canadian silver is not to be accepted in payment of fares over its lines. It is said that the reason for this order is that the company has a quantity of Canadian silver on its hands which it experiences difficulty in disposing of.

## Electric Railway Finance, Meetings, Etc.

**Cape Breton Electric Co.**—Gross earnings for January, \$29,054.06; operating expenses and taxes, \$17,782.38; net earnings, \$11,271.68; interest charges, \$5,485.41; balance, \$5,786.27; bond sinking and improvement funds, \$1,235.83; balance for reserves depreciation, etc., \$4,550.44, against \$29,798.29 gross earnings; \$18,563.18 operating expenses and taxes; \$11,235.11 net earnings; \$5,247.37 interest charges; \$5,987.74 balance; \$1,190 bond sinking and improvement funds; \$4,797.74 balance for reserves, depreciation, etc., for Jan., 1914.

**Detroit United Ry.**—The negotiations for the purchase of the street railway system in Detroit, Mich., by the city council, which is under consideration, involves only the lines in the city, 222 miles in all. The re-

12.87 cts. against 13.99 cts.; cost per car mile, 23.22 cts. against 21.11 cts.; passengers per car mile, 2.94 against 3.28; average fare per passenger, 4.21 cts. against 4.17 cts.

**London St. Ry.**—Gross earnings for January, \$30,616.10; operating expenses, \$21,518.62; net earnings, \$9,097.48, against \$28,354.13 gross earnings; \$19,853.66 operating expenses; \$8,500.47 net earnings for Jan., 1914.

**Saskatoon Municipal Ry.**—Receipts for week ended Mar. 6, \$2,431.05; passengers carried, 52,549; average number of cars in service, 12; average daily receipts per car, \$29; average fare, 4.626c. For the corresponding week in 1914, the receipts were \$2,489.25; and the number of passengers carried, 54,870.

**Sherbrooke Ry. and Power Co.**—Gross earnings for seven months ended Jan. 31, \$86,436; operating expenses, \$52,052; net earnings, \$34,384, against \$85,265 gross earnings; \$52,422, operating expenses; \$32,842 net earnings, for same period 1913-14.

**Winnipeg Electric Ry.**—The Manitoba Legislature has passed an act under which it is declared that in case the company has or may deposit any of its 4% perpetual consolidated debenture stock to secure advances for current account, such stock shall not be deemed to have been redeemed by reason of the repayment of such advances, but may be reissued. A similar provision is made to apply to any other bonds, debentures, or debenture stock. The company is given power to acquire stock or other securities of an electric light, power or tramway company or other corporation, or to raise money in order to aid by way of bonus, loan or advance to any other company with which it may have business relations.

## Electric Railway Notes.

The Saskatoon, Sask., City Council passed a resolution, Mar. 2, removing the special concession to workmen in the early morning hours, and making the street car fare a straight five cents for all adults.

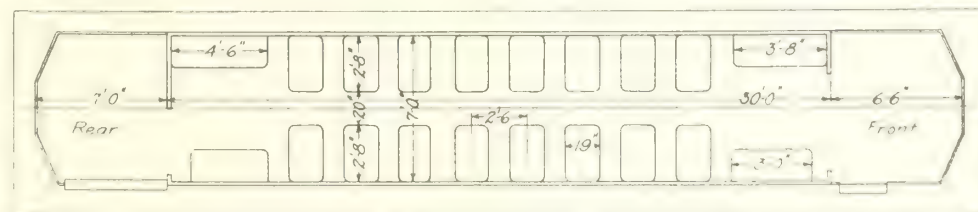
Commencing Mar. 1, the Edmonton, Alberta, city's power plant made a 25% cut in the charge to the Edmonton Radial Ry. for power. The charge for power is now 1.5 cts. a kilowatt hour instead of 2 cts.

After some discussion regarding the pro-

posal to increase the 2 ct. fares on the municipal electric lines, the Toronto Board of Control decided not to concur in the Works Commissioner's recommendation to that effect.

The Regina City Council is appealing against the decision of the Saskatchewan courts, awarding Louis Schell, a street car conductor, \$2,700 damages for injuries received by him through striking a street car standard near the Broad St. subway, in the course of his work.

The report of



Centre Aisle Cross Seated Car on the Toronto Railway.

Commissioner Reid on the public utilities of Lethbridge, Alberta, contains the following with regard to the Municipal Railway for the year 1914: "There has been no decrease in traffic since the straight 5c. fare went into effect, but it has not been long enough in force to enable the commissioner to judge of its worth. The revenue for the year was \$46,053.56, against \$60,609.62 for 1913; the expenditures were \$83,098, against \$91,440.84 in 1913; the deficit was \$37,044.44, against \$30,831.22 in 1913. Taxes to the amount of \$5,518.81 were added to the expenses of the department in 1914." Following are the traffic statistics in comparison with those for 1913:—Passengers carried, 1,054,848 against 1,420,011; car miles, 357,938 against 483,183; revenue per car mile,



The Manitoba Legislature has passed an act providing that electric railway cars may be operated within the town of Stonewall, and certain parts of the rural municipality of Rockwood, upon a favorable vote of the ratepayers.

The Mayor of Toronto, at a meeting of the Ad. Club in Toronto, Mar. 18, stated that the Rapid Transit Committee were preparing a proper rapid transit scheme for Toronto, including tubes and entrances for radial lines.

The Edmonton, Alberta, City Council decided, Mar. 2, to cancel its agreement with the employes of the Edmonton Radial Ry., discharge the men whose wages and hours are governed by it, and re-engage those who

desire to work under the new conditions and wage schedule to be laid down by the Council.

The Toronto City Works Department received tenders Mar. 16, for the supply of track material, overhead line material and oak ties, for the building of a line connecting the municipal electric lines at St. Clair Ave. and Bloor St. West, via Lansdowne Ave.

C. A. Lee, A.M.Can.Soc.C.E., read a paper on Jordan River Power Development, Vancouver Island, before the Canadian Society of Civil Engineers, in Montreal, Mar. 4. This development is owned and operated by the Vancouver Island Power Co., a subsidiary of the British Columbia Electric Ry. Co.

## The Progress of the Jitney Auto Service.

The jitney bus service has definitely invaded Victoria, Vancouver, Winnipeg and Toronto, in competition with the electric railway service given by the companies having franchises in those cities, and Edmonton and Saskatoon in competition with the municipally owned electric railways. The jitneys' first appearance in Canada was in British Columbia. They started running in Victoria in November last and there are now about 80 in that city. About the middle of November they also started in Vancouver and there are now about 325 in that city, with about 40 running between Vancouver and New Westminster. They are said to have very materially reduced the British Columbia Electric Ry.'s receipts. The automobiles used in this service are of various makes and sizes, many of which have been resurrected from the junk heap and some of which are liable to drop to pieces. In fact several have done so since the service was started. They have no organized system, but jump from one line to another and back again wherever they think they can pick up a load. They run only on paved streets inside the city limits and simply skim the traffic during rush hours both morning and evening, particularly during fine weather. If it is very wet they do not turn out. As stated in our March issue the Auto Public Service Co. of B.C., Ltd., has been incorporated under the B.C. Companies Act, in the interests of jitney owners, and in Victoria, an association of jitney owners has been formed under the provisions of the Benevolent Societies' Act.

The B.C. Legislature has made some amendments to the Motor Vehicles' Act, and various amendments have been made in the Vancouver City Act, giving the council power for inspecting, prohibiting, licensing and regulating motor vehicles, "the streets and routes upon which motor vehicles may be driven or operated, the capacity of motor vehicles and the number of persons, the quantity, weight and number of freight and other things which may be carried in or upon motor vehicles, the places in or upon motor vehicles, in which persons, freight and things may be carried, the number of motor vehicles which may be driven or operated on any street or route, the number of hours and time on any day during which motor vehicles may be operated or driven by any one person, and the fitness of drivers and chauffeurs to drive and operate motor vehicles." The finance, police and fire committees of the Vancouver City Council had a joint meeting Mar. 15, to frame regulations under the Act.

The first regular jitney in Edmonton, Alberta, started running on 24th Street, between Namayo Ave. and Stoney Plain Road, Mar. 15. The car will carry 12 to 15 persons, and in the event of not too stringent regulations being drawn up by the City Council, it is proposed to put similar cars on a number of routes and to run on time.

At Edmonton, Alberta, a city bylaw is being prepared to fix a prohibitive license on all autos operating as jitneys in competition with the municipal street railway. An editorial in one of the Edmonton papers says:—"We seem to have no alternative but to clap on restrictive legislation as a means of self protection. Undoubtedly that is a kind of legislation to which a great many people have an instinctive dislike. It is a direct negation of the principle that the individual is entitled to the best service he can get for the money. Yet, what are we to get for his money? We cannot afford to put the street railway system—which we have to pay for—on the scrap heap. The Saskatoon, Sask., City Council is preparing to impose a high license fee on any cars operating as jitneys. Of the towns outside Vancouver, North Vancouver has appointed a commission to draw up regulations for the control of this new traffic, and other towns are moving in the same direction.

Canadian cities are finding the same difficulties with jitneys as United States cities have. In addition to the difficulties arising out of the great variety of vehicles used, and the overcrowding of the same, in Victoria, Vancouver and Winnipeg the police are finding difficulty in enforcing traffic regulations. Traffic in the already congested districts is becoming more congested, and the more or less irresponsible jitney owners or drivers openly disregard the directions of traffic officers. The number of fines inflicted for breaches of the traffic bylaws in these cities is increasing, the offenders in nearly every case being jitney drivers. There is also an increasing number of street accidents due to the increasing traffic, for which jitneys are in a large measure responsible. In Seattle, Wash., out of nine auto accidents on Jan. 17, seven were due to jitneys. Attention is also drawn by Women's Councils in several of the U. S. cities to the dangers of the new traffic to public morals, instances being given where jitneys have been operated in connection with immoral resorts.

The only course for the public authorities to take is to make such regulations for the traffic, as will protect the public, and keep out of the field the irresponsible, the dishonest (such as one driver who is reported to have said he never completed a schedule route during rush hours because it was not profitable), and the reckless drivers.

As an example of the effect of the jitneys on street car earnings it is stated that a company operating in Seattle, Wash., is losing \$2,500 a day in earnings, and is about to reduce its service. In Portland, Oregon, the company has issued two pamphlets dealing with the subject, one to its employes, and the other to the public. The first places before the men information and arguments to be used in meeting statements favoring the jitney traffic, and the second points out

among other things that 15½% of the company's revenue goes to federal, state, county and city governments for the mere privilege of doing business.

Various states are moving in the direction of enacting laws for the control and regulation of the traffic. Oregon proposes to place jitneys under the same regulations, as street railways, and auto common carriers outside cities under the same regulations as steam railways; the Massachusetts state legislature is considering a bill to put the control of the new traffic under the Public Service Commission, and authorizing the municipal authorities to name the conditions under which jitneys may be operated. The bill provides that the capital of the companies operating such service shall be not less than \$10,000 for each seat in the largest vehicle operated, and may be increased by the commission.

Following on the establishment of a jitney service in the northern suburbs of Toronto in February, an additional service was put on, Mar. 15, running from Front St. on the south to the Toronto and York Radial Ry. station in the northern part of the city. Several automobiles are being utilized, with accommodation for an average of six persons each, the fare charged being 5c. a trip, and 6 tickets for 25c. The Jitney Motor Bus Co. applied to the city, Mar. 12, for a permit to operate a service on Yonge St., as from Mar. 15. The Mayor is reported to have stated, in connection with the application, that there is nothing to interfere with the company in operating such a service, but that there should be an agreement by which the city should be guaranteed 25% of the revenue. He said that undoubtedly the Toronto Ry. traffic would suffer and the city percentage would be affected. The Toronto Jitney Association has been formed with the object of protecting the interests of those concerned in the traffic.

## Calgary Municipal Railway's Operating Results.

Following is a comparative statement for January, 1915 and 1914:—

	1915.	1914.
Car and miscellaneous earnings .....	\$47,726.41	\$57,640.20
Maintenance of way and structures .....	\$ 631.81	\$ 1,994.87
Maintenance of equipment .....	2,476.89	8,618.55
Transportation .....	27,068.24	40,746.78
General expenses .....	1,451.46	1,878.72
Total operating expenses .....	\$31,628.40	\$53,238.92
Wages held back conditionally .....	1,250.96	.....
Balance of revenue .....	14,847.05	4,401.28
	\$47,726.41	\$57,640.20

The following were fixed charges for Jan., 1915:—

Depreciation and sinking fund .....	\$5,906.51
Contingent account, gross receipts ..	954.32
Debt interest .....	8,853.29
Insurance .....	625.00

	\$15,339.12
Deficit for Jan., 1915 .....	\$1,502.27

	Jan. 1915.	Jan. 1914.
Revenue per car mile ..	21.244 cts.	20.484 cts.
Operating expenses per car mile .....	14.078 "	18.920 "
Surplus (gross) .....	7.165 "	1.564 "
Cost of power per car mile .....	3.947 "	4.906 "
Proportion operating expenses to revenue ....	66.270%	92.36%

The recommendations of the city auditors on the Municipal Railway accounts for 1914, have the effect of turning what appeared to be a deficit into an apparent surplus of \$10,000. The recommendations include the charging to general city account of the interest and sinking fund charges of the Ogden line, and the reduction of the depreciation on the lines from 7½ to 5%. The auditors point out that the Ogden line was built for the benefit of the city at large, and that the reduced traffic warrants a reduction in the provision for depreciation.



# Marine Department

## Coast, Lake and River Officers for 1915.

The following appointments, made by navigation companies, engaged in Canadian navigation, for their various steam vessels and tugs, for this year, have been reported to Canadian Railway and Marine World, by the managements. The first column shows the names of the vessels, the second those of the captains, and the third those of the chief engineers.

### ALGOMA CENTRAL STEAMSHIP LINE, SAULT STE. MARIE, ONT.

Agawa	J. A. Brown	J. L. Smith
E. D. Carter	C. H. Wilson	R. J. Sullivan
J. A. McKee	H. C. Wingrove	Jno. Knight
J. Prater Taylor	R. H. Boyle	L. B. Cronk
Paliki	R. G. Bassett	A. M. MacInnes
T. J. Drummond	A. McIntyre	W. T. Rennie
W. C. Franz	W. C. Jordan	G. Sylvester

### AMERICAN YUKON NAVIGATION CO., VANCOUVER, B.C.

Alaska	J. T. Gray	J. P. Morrison
Delta	M. Lemley	T. Fitzgerald
Meteor	E. Olson	R. H. Jones
Reliance	G. Green	T. Hyde
Sarah	S. E. Lancaster	N. Madin
Schwatka	W. T. Hoelscher	B. Bryant
Susie	M. M. Looney	M. J. Stack
Tanana	J. C. McCann	O. A. Anderson
Washburn	E. J. Josie	F. W. Anderson
Yukon	J. C. Green	J. W. Pearson

### BRITISH YUKON NAVIGATION CO., VANCOUVER, B.C.

Casca	J. O. Williams	F. Murray
Dawson	C. H. Bloomquist	J. R. Young
Gleaner	J. G. Roberts	J. Landerdale
Nasutlin	J. P. Douglas	P. Bourne
Scotia	J. McDonald	D. Sullivan
Selkirk	G. H. McMaster	W. C. Vey
Whitehorse	— Turnbull	P. Larssen

### BURNHAM, MORRILL & CO., HALIFAX, N.S.

Mary Jane	V. G. Henry	S. Silver
Robie M.	R. A. Hines	J. McArvill

### BUTLER FREIGHTING & TOWING CO. LTD., VICTORIA, B.C.

Grainer	D. J. Butler	H. Soper
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### CANADA ATLANTIC & PLANT LINE STEAMSHIP CO. LIMITED, HALIFAX, N.S.

Evangeline	F. H. Hawes	Jas. Smith
Halifax	A. Ellis	R. McKay

### CANADA ATLANTIC TRANSIT CO. LTD., MONTREAL

Arthur Orr	Jno. Simons	D. Mance
George N. Orr	H. Jaenke	J. B. Wellman
Kearsarge	W. Baxter	A. P. Williams
Newona	W. J. Moles	W. Paus

### CANADIAN NORTHWEST STEAMSHIP CO. LIMITED, TORONTO

Atikokan	W. J. Brown	C. Arnberg
George A. Graham	P. McIntyre	J. H. Loudon
Neehing	Jno. Ewart	R. R. Foote
Paipoonge	J. N. Foote	H. H. Moore

### CANADIAN PACIFIC CAR & PASSENGER TRANSFER CO. LIMITED, PRESCOTT, ONT.

Charles Lyon	W. Henry	L. Black
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### C.P.R. DETROIT RIVER CAR FERRIES, WINDSOR, ONT.

Ontario	R. Brown	F. Merrill
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### C.P.R. UPPER LAKE SERVICE, PORT MCNICOLL, ONT.

Alberta	F. J. Davis	C. Butterworth
Assiniboia	Jas. McCannell	A. Cameron
Athabasca	J. B. Currie	G. D. Adam
Keewatin	M. McPhee	W. Lewis
Manitoba	J. McIntyre	R. Sinclair

### C.P.R. BAY OF FUNDY SERVICE, ST. JOHN, N.B.

St. George	M. Cardiff	J. T. Kelly
Yarmouth	A. B. MacDonald	Jas. Pendrigh

### C.P.R. BRITISH COLUMBIA LAKE AND RIVER SERVICE, NELSON, B.C.

Bonnington	G. Robertson	T. F. McKechnie
Hosmer	F. L. Orr	A. McLeod
Naramata	J. W. Weeks	J. P. Sutherland
Nasookin	W. Seaman	D. H. Biggam
Proctor	G. Graham	P. H. Pearce
Rossland	A. Forslund	J. Fyfe
Sandon	M. P. Reid	N. Hawthorn
Sicamous	W. Kirby	W. Jacobs
Slocan	W. Wright	D. McLeod
Valhalla	Jas. Ferguson	T. C. Anson
Whatshan	J. Fitzsimmons	W. Edwards

### HUGH CANN & SON LIMITED, YARMOUTH, N.S.

Bruce Cann	I. A. Banks	H. Doane
Hugh D.	E. B. Nickerson	R. M. Gammon
John L. Cann	A. L. McKinnon	J. Nixon
La Four	F. E. Smith	C. R. Weddleton
Malcolm Cann	J. R. Durkee	D. E. Read
Mary H. Cann	F. L. Nickerson	H. Goodwin
Percy Cann	—	A. Wyman
Robert G. Cano	W. E. Morris	J. Anderson
Wanda	W. Brush	W. Amiro

### CAPE BRETON ELECTRIC CO. LIMITED, SYDNEY, N.S.

Electronic	I. H. Lewis	B. Dixon
Hygeia	J. Brown	A. Campbell
Peerless	A. McLeod	J. B. Weeks

### CHIATHAM NAVIGATION CO. LIMITED, CHIATHAM, ONT.

Ossifrage	T. J. Stockwell	George Peel
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### CHARLOTTETOWN STEAM NAVIGATION CO. LTD., CHARLOTTETOWN, P.E.I.

Empress	A. Cameron	J. A. Rowe
Northumberland	A. W. McLeod	C. Cuming

### COAST STEAMSHIP CO. LTD., VANCOUVER, B.C.

British Columbia	G. Foellmer	J. Ellison
Celtic	J. Finlay	H. Buxton
Clansman	M. F. MacDonald	H. Nissen
Fingal	R. W. H. Lloyd	H. Spencer

### CHICAGO, DULUTH & GEORGIAN BAY TRANSIT CO., CHICAGO, ILL.

North American	C. M. Haight	J. F. Buritz
South American	G. M. Cummings	C. H. Menmuir
Victoria	F. Clements	St. John, N.B.
Crystal Stream	H. Weston	Jos. Williams

### CRYSTAL STREAM STEAMSHIP CO. LIMITED, ST. JOHN, N.B.

D. J. Purdy	B. Dykeman	G. McVicar
Majestic	H. Crabb	W. Hurder

### DARTMOUTH FERRY COMMISSION, DARTMOUTH, N.S.

Chebucto	N. Wallan	C. Pearce
Dartmouth	J. Hare	C. Shortt
Halifax	W. Jennex	A. McLeod

### DEER ISLAND & CAMPOBELLO STEAMSHIP CO. LIMITED, ST. STEPHEN, N.B.

Viking	F. Johnson	F. H. Rowe
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### DOMINION TRANSPORTATION CO., SAULT STE. MARIE, MICH.

Caribou	A. A. Batten	Jas. Nicoll
Manitou	N. J. McCoy	Jno. McDonald

### DONNELLY SALVAGE & WRECKING CO., LIMITED, KINGSTON, ONT.

Cornwall	Jas. Murray	R. Vince
Saginaw	L. Spencer	Jno. Rice

### EASTERN MANITOULIN ROYAL MAIL STEAMSHIP LINE, LITTLE CURRENT, ONT.

Amigo	C. L. D. Sims	.....
Bon Ami	Ed. Mackie	R. A. Johnston
John Haggart	S. J. Smith	.....

### FARRAR TRANSPORTATION CO. LIMITED, TORONTO

Collingwood	W. A. Richmond	Duncan McLeod
Meaford	Hugh Davidson	Samuel Beatty

### FORT ERIE & BUFFALO FERRY CO. LIMITED, FORT ERIE, ONT.

Welcome	R. Parsons	W. Wooliver
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### FORWARDERS LIMITED, KINGSTON, ONT.

Port Colborne	W. Steeves	J. H. McMillan
Port Dalhousie	Jos. Napier	L. McMillan
W. H. Dwyer	J. P. McLeod	J. Silverthorne

### GASPE & BAIE DES CHALEURS STEAMSHIP CO. LIMITED, QUEBEC, QUE.

Acadian	P. Blouin	J. Cantin
Gaspesian	T. D. Morin	N. P. Mastro

### GASPE STEAMSHIP CO. LIMITED, QUEBEC, QUE.

Lady of Gaspe	J. B. Deslauriers	H. Mercier
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### GRAND MANAN STEAMSHIP CO. LIMITED, GRAND MANAN, N.B.

Grand Manan	N. MacKinnon	J. G. McGray
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### G.T.R. CAR FERRIES, WINDSOR, ONT.

Detroit	R. Aikin	H. Lowry
Great Western	.....	Jos. Ladds
Huron	M. Bausette	A. Cook
Lansdowne	H. Oldenberg	W. Belsom
Transfer	G. Honner	W. Taylor
Transport	W. Worrell	F. Robinson

### GRAND TRUNK PACIFIC COAST STEAMSHIP CO. LTD., VANCOUVER, B.C.

Escort No. 2 (tug)	T. Foster	J. Taylor
Henriette	H. L. Robertson	F. Davies
Prince Albert	W. S. Morehouse	R. Bell
Prince George	D. Donald	I. O. Handy
Prince John	C. W. Wearmouth	A. S. Munro
Prince Rupert	D. MacKenzie	D. G. Ferrier

### GREAT LAKES TRANSPORTATION CO. LIMITED, MIDLAND, ONT.

Calgary	J. H. Solery	T. Walker
Glenferris	W. Linton	C. McWilliam
Glenfoyle	W. Taylor	J. P. Davidson
Glenlivet	F. Burke	W. McWilliam
Glenlyon	A. Hudson	D. Sinclair
Glenmavis	I. Dix	E. Shaw
Glenishe	W. Leveigne	F. Goodwin
Glenyay	T. Anderson	J. Jackson
Major	S. Carson	W. McCabe
Toiler	F. A. McMann	G. Price

### HALIFAX & CANSO STEAMSHIP CO. LIMITED, HALIFAX, N.S.

Halifax	Jas. Schmeisser	J. G. Clark
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### HALIFAX & SAULT STE. MARIE STEAMSHIP CO. LIMITED, HALIFAX, N.S.

Margaret	P. C. Cooper	J. W. Gunn
Byron Whitaker	F. E. Hall & Co., Montreal	.....
Carleton	E. Tremblay	F. Patterson
Compton	E. Groulx	E. Scott
Robert R. Rhodes	B. Bowen	L. Smith
Sindbad	W. H. Ransom	F. A. Collier
Stanstead	J. C. McCarty	A. Theriault
W. Hanna & Co., Port Carling, Ont.	D. McLachlan	M. J. McFaul
Mink	W. H. McCulley	C. E. Raaflaub
Newminko	J. J. McCulley	S. W. Lambert

### HALL & ELICH LTD., OTTAWA, ONT.

Roberval	P. Eligh	O. Hamelin
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### INTERNATIONAL TRANSIT CO. LIMITED, SAULT STE. MARIE, ONT.

Algoma	F. Frech	C. Innes
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### ISLAND TUG CO. LTD., CHARLOTTETOWN, P.E.I.

Fred M. Batt	W. M. Snow	C. Bell
Harland	J. T. McLaine	A. Roebuck

### KEENAN TOWING CO. LIMITED, OWEN SOUND, ONT.

Keenan	J. Rutherford	W. Owens
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### KEYSTONE TRANSPORTATION CO. LIMITED, MONTREAL

Keybell	J. J. Murray	E. W. Sparling
Keynor	Jas. Martin	Jno. Robertson
Keyport	Jno. Mullen	R. J. Muchmore
Keyvive	G. Bunting	Jas. Boak
Keywest	M. Olsen	W. H. Jennison

### LA HAVE STEAMSHIP CO. LIMITED, WEST LA HAVE, N.S.

Trusty	J. Crouse	A. Zwickler
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### LAKE ERIE NAVIGATION CO. LIMITED, WALKERVILLE, ONT.

Marquette and	M. M. Rowan	H. Culp
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### MAGNETAWAN RIVER & LAKE STEAMBOAT CO., BURKS FALLS, ONT.

Armour	Jas. Mortimer	F. Dunn
Glenada	W. Kennedy	E. Goldthorpe
Gravenhurst	S. Carswell	M. Pritchard
Thurso	C. Gerow	J. Gerow
Wanita	W. Keitch	J. Kennedy

### MARINE EXPRESS LTD., VANCOUVER, B.C.

Marine Express No. 1	W. Yates	J. C. Scott
Mon-Ping	J. Metcalf	J. Power

### THE MARITIME & INDUSTRIAL CO. OF LEVIS, LIMITED, LEVIS, QUE.

Champion	D. Lemay	C. Barras
Frontenac	Jos. Plante	N. Lamothe

### MARITIME STEAMSHIP CO. LIMITED, BLACKS HARBOR, N.B.

Connors Bros.	E. H. Warnock	G. A. Cowie
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### MARQUETTE & BESSEMER DOCK & NAVIGATION CO., WALKERVILLE, ONT.

Marquette and	J. Vanbuskirk	J. Riley
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### MATHEWS STEAMSHIP CO. LIMITED, TORONTO

Easton	D. N. Laroche	J. T. Myler
Edmonton	H. Maitland	J. G. Fisher
Masaba	J. A. Smith	W. Whippis
Steelton	W. J. Kirkwood	A. McGill
Yorkton	.....	D. McKenzie

### MEMPHRAMAGOG NAVIGATION CO. LTD., GEORGEVILLE, QUE.

Anthemis	J. G. Sampson	.....
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### MONTREAL TRANSPORTATION CO. LTD., MONTREAL

Advance	J. V. Norris	J. M. Sherman
Bartlett	A. Lepine, Jr.	J. B. Lappen
Brinson	L. Mallan	A. Stillson
D. G. Thomson	.....	G. Henderson
Emerson	W. J. Murphy	J. Lamoureux
Fairmount	W. Liddell	G. Flemming
Glenmount	H. Peters	R. Knight
Glide	M. Barry	M. Perry
India	C. Beupre	F. Brian
Kinmount	Jno. Wood	R. Taylor
Mary	T. Lepine	F. St. Germain
Mary P. Hall	A. Lepine	T. Brabant
Northmount	Jas. Sutherland	R. H. Veech
Rosemount	G. Graham	G. Dennison
Simla	C. Coons	R. Simons
Stormount	Jas. Reoch	F. Moyle
Westmount	F. Howell	W. Spencer
Windsor	Jno. Doyle	A. Dunn

### NIAGARA, ST. CATHARINES & TORONTO NAVIGATION CO. LIMITED, ST. CATHARINES, ONT.

Dalhousie City	J. W. Maddick	J. H. Brown
Garden City	G. Blanchard	H. R. Welch

### NORTHERN NAVIGATION CO., SARNA, ONT.

City of Midland	F. A. Garrett	J. Osburn
Germanic	F. G. Moles	S. Burgess
Hamonic	A. L. Campbell	Jno. Smith
Huronic	A. M. Wright	Jno. Dow
Ionic	O. Wing	.....
Majestic	J. D. Montgomery	.....
Noronic	R. D. Foote	S. Brisbit
Waubic	G. W. Kinnee	S. Beatty

### NORTH VANCOUVER FERRY CO. LTD., NORTH VANCOUVER, B.C.

North Vancouver	W. Falke	I. Burns
Ferry No. 1	.....	.....
North Vancouver	R. R. Spicer	D. Becker
Ferry No. 2</		



PORT HURON & SAGINAW FERRY CO., PORT HURON, MICH.		
Hiawatha	E. M. Thomas	H. Myers
	G. W. Wainwright	W. Winterhalter
Omar D. Conger	W. S. Major	R. Cameron
PRESBURY & OGDENSBURG FERRY CO. LIMITED, PRES-		
COTT, ONT.		
Miss Vandenberg	H. Black	W. J. Jenks
	S. Delaney	
QUEBEC AND LOTBINIERE NAVIGATION CO. LTD., STE.		
	CROIX, QUE.	
Itoule	J. D. Boisset	E. Desrochers
	R. Gauthier	
QUEBEC TRANSPORTATION CO. LIMITED, QUEBEC, QUE.		
Florence	V. Gendron	O. Croteau
J. H. Hackett	Jos. Thibault	A. Legendre
M. A. Hackett	Jas. Stitt	Jos. Asselin
RAINY RIVER NAVIGATION CO. LTD., FORT WILLIAM, ONT.		
Keenora	W. R. Isherwood	S. Clarke
RIDEAU LAKES NAVIGATION CO. LTD., KINGSTON, ONT.		
Rideau Queen	E. Fleming	T. Hazlett
RIVER LIEVRE NAVIGATION CO. LIMITED, BUCKINGHAM,		
QUE.		
George Bothwell	G. N. Bothwell	G. Bothwell
ST. JOE ISLAND & SAULT LINE, SAULT STE. MARIE, ONT.		
Premier	W. Hyland	D. S. Crawford
ST. LAWRENCE & CHICAGO STEAM NAVIGATION CO. LIM-		
ITED, TORONTO		
E. B. Oster	C. E. Robinson	W. Robertson
G. R. Crowe	J. H. Hudson	W. Reid
Iroquois	D. A. Kennedy	J. E. Readman
J. H. G. Hagarty	S. Hill	C. Robertson
W. D. Matthews	W. Cunningham	W. Harwood
SPARROW LAKE STEAMER LINE, SPARROW LAKE, ONT.		
Glympse	A. F. Stanton	G. T. Stanton
Lakefield	F. Stanton	

TERMINAL STEAM NAVIGATION CO. LTD., VANCOUVER, B.C.		
Ballena	J. A. Cates	A. Pierie
Bowena	F. W. Golbert	W. Brown
CITY OF THREE RIVERS, QUE.		
Le Progres	M. W. Lewis	A. Frenette
THREE RIVERS STEAMSHIP CO. LTD., MONTAGUE, P.E.I.		
Enterprise	J. A. Hughes	Jno. Fraser
UNION STEAMSHIP CO. LTD., VANCOUVER, B.C.		
Camosun	A. E. Dickson	A. Beattie
Capilano	S. Nelson	T. McC. Donaldson
Cassiar	G. Gaisford	A. Edgar
Cheakamus	J. Cockle	L. P. Thomas
Chelohsin	J. F. Edwards	G. H. Foster
Comox	G. Whalen	A. T. Roy
Coquitlam	N. Gray	
Cowichan	C. Moody	R. M. Logan
Venture	J. Park	C. Arthur
VALLEY STEAMSHIP CO. LIMITED, ANNAPOLIS ROYAL, N.S.		
Granville	C. W. Collins	V. McCullough
VICTORIA NAVIGATION CO. LIMITED, THURSO, QUE.		
Victoria	F. Elliott	P. Belanger
WALKERVILLE & DETROIT FERRY CO., WALKERVILLE,		
ONT.		
Ariel	W. H. Corr	H. Henderson
Essex	F. A. Wilkinson	P. McLaren
WESTERN NAVIGATION CO. LTD., FORT WILLIAM, ONT.		
Kaministiquia	E. L. Stephen	H. Young
WINDSOR AND PEELEE ISLAND STEAMSHIP CO. LTD., PEELEE		
ISLAND, ONT.		
Pelee	J. N. Sheats	J. Kenney
WINDSOR, DETROIT AND WALLACEBURG STEAMSHIP LINE		
WINDSOR, ONT.		
Olcott	J. C. Fox	L. F. Miller

## Disastrous Voyage of the s.s. Desola.

The Canadian steamship *Desola*, of Montreal, 2932 registered tons, length 340 ft., loaded a cargo of sulphuric acid or oleum, consisting of some 7,000 odd drums, each weighing 800 lbs. net, in New York early in

the engineer had not returned. Some time elapsing the Chinese firemen became alarmed at the non appearance of either, entered the tunnel in a body and found both engineer and oiler unconscious. The Chinese rolled



The Canadian Steamship *Desola*, at St. John's, Nfld.

December, and started for Ardrossan, Scotland. It is assumed that the oleum was to be used for the manufacture of high explosives by the British Government, the Canadian Explosives Co. securing the product from a Newark, N. J., concern. The *Desola* encountered very heavy weather for several days. Her decks were continually flooded fore and aft, and it is assumed that a large quantity of sea water must have found its way into the cargo holds, either through the hatchways or down the ventilators; the result was that large quantities of poisonous gases escaped from the cargo holds and found their way into the crew's quarters, also into the engine room, stokehold, and tunnel shaft.

The crew was composed of Chinamen, with white officers in charge, under Capt. Drurie, Chief Mate Swift and Chief Engineer Dixon. About January 12, the fourth Engineer, W. Sheppard, being on watch at this time went into the shaft tunnel to see that the bearings were being oiled, etc., and as he did not return in a reasonable time, the Chinese oiler on watch with him notified the fireman that he was entering the tunnel to find out why

their countryman off the white engineer, took the latter out of danger and then returned for the oiler, showing conclusively the loyalty of the crew to their white officers. So badly was the engineer injured that he still lies in the hospital in St. John's, Nfld., his injuries being principally burns from the combination of water and sulphuric acid.

The conditions were so bad that the master deemed it advisable to put into St. John's to have the cargo restowed. About 3,000 drums were removed from the vessel and about 300 of these were proved to be in a leaky condition. They were disposed of and the remainder of the cargo restowed in a careful manner. After this was done it was discovered that the acid was draining into the bilges of the vessel and mixing with the bilge water, seriously affecting the pumps and their connecting parts. The vessel also sprang a leak in the forward end. About this time Capt. H. B. Saunders, agent for the London Salvage Association, with Chemical Expert E. E. Armstrong of the Canadian Explosives Co., arrived at St. John's from New York in connection with the vessel and cargo, and after examining the vessel, decided

it would be impossible for her to continue the voyage to Ardrossan, but recommended, under certain conditions, that she return to New York to have her cargo reconditioned. After waiting a few days, and there being apparently no danger from the fumes, the vessel left St. John's, but had only proceeded about 200 miles before the former conditions were again met with. It is apparent that after meeting a rather heavy sea some more drums commenced to leak, and conditions became so serious that the master was obliged to return to St. John's.

Conditions now became so bad that the agent in charge of the cargo and ship, after getting in touch with the owners and underwriters, received authority to discharge the cargo and have the vessel thoroughly examined and repaired, but considerable difficulty was found in getting anyone to receive the cargo. Eventually the Reid Newfoundland Co. agreed to transport it to Irvine, about 10 miles out of St. John's, and to erect a temporary shed to allow the cargo to be reconditioned, and in due course shipped to its destination. The work of discharging the cargo was commenced on Mar. 1, and although considerable difficulty was experienced by the obnoxious fumes arising from the holds, about 2,000 drums were discharged and taken to the storing place, but on the afternoon of Mar. 3, the fumes became so bad that work had to be stopped. It was found that about 35% of the drums were in a leaking condition, and 5% of these actually had large holes from 3 to 10 ins. in diameter, and were as thin as paper in several places. About 9 p.m. the crew, who were sleeping in the forecabin, heard a roaring issuing from the two 3 in. vent pipes from the forward ballast tank and immediately evacuated their quarters. One of the crew procured a lantern to investigate, when suddenly gases became ignited and burned very fiercely, consuming the wood work in the forecabin. This was explained by Chemist Armstrong as being due to the presence of hydrogen gases in large quantities, which was caused by the action of the sulphuric acid dissolving the iron parts of the ship. This continued to burn with great ferocity until 3 a.m., when it was extinguished by the combined efforts of the men of His Majesty's training ship *Calypso* and the local fire department. During this time, great volumes of fumes from every hold of the ship were arising and being carried by the wind for several hundred yards, making it impossible to approach the ship unless properly protected from the fumes. The Reid Newfoundland Co., realising the danger of allowing the vessel to remain at their wharf, requested the captain to have her removed as far as possible, so that in case of an explosion their dock premises would not be damaged. This work was commenced at daylight, during which time it was apparent that the acid had succeeded in eating holes through the bulkheads, which allowed the water to flow into the stokehold of the vessel. She also commenced to make considerable water, and in a short time the fires were put out and the vessel apparently commenced to sink. So many complaints were made from the neighboring tenants of houses and workmen employed in the buildings in the vicinity of the fumes, that the Government issued instructions to the captain of the vessel and the agent, to remove her at once, and it was decided that the only safe method of disposing of her was to tow her out of the harbor away from inhabited regions. This, however, was found impossible by the ice blockade which had effectually closed the port for several days. About 9 p.m. a series of explosions took place on the vessel and the captain ordered the crew and officers to



leave her. Shortly after they had done so the after part of the vessel burst into a volume of flame, reaching as high as the topmast. The fire department was called but could do nothing to check the flames and practically all the wood work in the cabins and the accommodations of the vessel were destroyed. Soon after the fire commenced she commenced to sink rapidly, and now lies partially submerged and resting on the bottom. The action of the acid after the ship was submerged continued and the drums could be heard bursting, and the water in her was kept in a boiling condition for three days after she sank. Portions of the hull became so heated that the paint on the outside was burnt off.

The captain and crew displayed great bravery in sticking to the ship so closely in the dangerous condition that she was found to be in. Chief Engineer Malcolm Dixon, particularly, was untiring in his efforts to keep the pumps in order, to prevent the water reaching the cargo. It is probable that an effort will be made to raise the *Desola* in the near future, so that she may be placed in dry dock for survey.

This is probably the first case of this nature that has occurred. There will probably be litigation as to who will remove the vessel and pay damages. The underwriters will be likely to try and recover damages from either the makers of the steel containers, or the manufacturers of the acid. The *Desola* was valued at \$132,000, and the cargo of 7,000 steel drums of sulphuric acid weighing 850 lbs. each, was valued at \$175,000.

### The Shipping Federation of Canada.

The annual general meeting was held at Montreal, Mar. 1. The report of the President, A. A. Allan, stated that the first vessel to arrive in Montreal for the 1914 season was the Allan Line s.s. Corsican, Apr. 29, and the last vessel to leave was the Manchester Liners s.s. Manchester Spinner, Dec. 4. At the outbreak of war a great number of vessels in the Canadian trade were requisitioned by the Admiralty, and several of the shipping lines, in order to maintain their schedules, were obliged to charter outside steamers. In many cases the higher rates paid left a very small margin of profit, owing to the delays and detentions that had been caused at the ports on the other side. The total number of seagoing vessels arriving during the season was 916, an increase of 96 over the previous year, with an increased tonnage of 68,827 tons. There was a serious falling off in the passenger service, particularly in the westbound traffic. Exports show decreases in the following commodities, as compared with 1913:—apples, 49,733 barrels; cheese, 88,267 pkgs.; lard, 200,633 pkgs.; lumber, 34,969,363 ft.; while the following showed increases:—butter, 5,572 pkgs.; oats, 1,152,508 bush.; flour, 16,948 sacks; hay, 203,022 bales, and wheat, 27,365,164 bush.

In connection with the transportation of the first Canadian expeditionary force to Great Britain, shipowners were called upon by the Dominion Government to inform the Minister of Militia and Defence how many steamships could be supplied to carry a certain number of troops by a certain date. Within a few days a list of 52 vessels, approximating 476,717 gross tons, was submitted as being suitable, from which 32 vessels of nearly 330,000 tons were requisitioned. The companies were left to look after the coaling and provisioning of the vessels, and the engaging of additional crews to cope with the increase of work in all departments. Most, if not all, of the vessels had to be transformed into transports,

involving an immense amount of work. Most of this was done at Montreal, and the vessels sent to Quebec, where embarkation took place.

In view of the fact that the British Board of Trade had given permission to vessels loading in the White Sea to carry full deck loads for an extra period, the Shipping Federation approached the Canadian Government with the view of having the same privilege extended to British vessels sailing from Canada, and as a result of negotiations the Government notified shipowners that they would not proceed against owners of vessels sailing from ports in Canada up to Nov. 7 last, and the privilege was later extended to Mar. 16.

The tonnage entered in the Federation in 1914 was the highest since incorporation. The total line tonnage was \$40,188, an increase of 206,966 over the previous year. The tramp tonnage was 340,940 tons, an increase of 249,337, or a grand total of 456,303 tons over 1913. During 1914 there was an increase of 22,363 tons in the Canadian registered tonnage entered in the Federation, as compared with 1913.

A. A. Allan was re-elected President for the current year, the other members of the executive council being, J. R. Binning, D. W. Campbell, A. Mackenzie, W. R. Eakin, R. W. Reford, John Torrance.

The following representatives of the various steamship companies were elected:—Allan Line, A. A. Allan, W. A. Wainwright; White Star-Dominion, Canada, and Cie. Generale Transatlantique Lines, John Torrance, P. V. G. Mitchell, W. Macpherson; Cunard, Donaldson, Thomson and Cairn Lines, R. W. Reford, W. I. Gear; Manchester Liners and Furness Withy and Co., J. R. Binning, J. W. Nicoll; New Zealand Shipping Co., E. W. Foulds, V. A. Ward; Elder Dempster and Co., D. W. Campbell; Canadian Northern Steamships, R. C. Vaughan, G. Tombs; Head Line, W. R. Eakin, A. E. Francis; Dominion Coal Co., A. Mackenzie. A. Dick; Nova Scotia Steel and Coal Co., L. C. Webster.

### The Canadian Pacific Railway Ocean Services.

It is stated that the name by which the new company, which will take over the C.P.R. ocean vessels, together with any other vessels which may be decided upon, will be Canadian Pacific Ocean Services, Ltd., and that it will be registered in England. The bill to authorize the transfer passed the House of Commons, Mar. 8.

Sir Thomas Shaughnessy is quoted as saying:—"The C.P.R. is operating steamships on the Atlantic and Pacific Oceans, and on the Pacific Coast and the Great Lakes and other inland waterways of Canada. These latter are connecting links between different sections of the railway line, and are, therefore, essentially a portion of the railway transportation system, and it is not proposed to change their status. The ocean fleets are, however, in a different class, engaged in competition with outside fleets, plying between Canada and other portions of the world. The company proposes to transfer these ships to a steamship company, with which the business relations will be the same as they are with outside steamship lines which exchange traffic with the railway company. Heretofore, all expenditures for the acquisition and construction of these ocean steamships were made by the railway company and included amongst the liabilities in its balance sheet. Hereafter, it is proposed that the steamship company shall itself secure the requisite money for these purposes by the issue of its own securities. The ownership and control of

the steamship company will remain with the C.P.R., but the management and operation of the steamship lines will be vested in the directors of the Canadian Pacific Ocean Services, Ltd. It is only another step in the direction of eliminating from the direct operations of the railway company items that do not relate to the railway property itself."

### The Morwenna-Chebucto Collision.

Following is the judgment re the collision between the s.s. Morwenna and the ferry steamboat Chebucto in Halifax harbor, Jan. 30. The enquiry was held by Capt. L. A. Demers, Dominion Wreck Commissioner, with Capt. John Fleming and John Hearn as nautical assessors:

The court, having carefully weighed a most contradictory version of this accident, is of opinion that the master of the Morwenna, Luke Holmes, when leaving the wharf, exercised the usual prudence necessary on such an occasion; but when straightening up on his course for probably a point on Georges Island, in order to get into position to go out of the harbor, and noticing the ferry was on his port side, and considering it was his duty to keep clear of him, when he saw there was a danger he blew one blast of the whistle and gave an order to the engine room to stop, and two minutes later gave order full speed astern. Upon being asked what he did after blowing one blast, he said he kept his helm amidships, which we consider was contrary to the rules of the road as established, as the signal one blast was misleading in this case. While we admit the one blast was sounded as a signal of warning, as he claimed, to the other vessel, no one on the Chebucto heard such a signal, and the court can easily understand the reason of it. The vessel had been two days in the dock and the whistle was not used, the steam had remained in the pipe and was condensed, and a certain amount of water had accumulated therein. Upon leaving the wharf, there was only about 160 lbs. of steam, and upon the first blast of the whistle, which might be a sound, as he said, it might not have been sufficiently loud to be heard any great distance owing to the accumulation of water in the pipe. Again, when he saw that the collision was inevitable, it was very apparent he did not take the precautions which are required of a shipmaster, to go full speed astern or starboard his helm in order to pass astern of the ferry boat, and by the entries in the log and the succession of signals given to the engine room within a minute, and maybe a little more, between each other, and the sounding of one blast of the whistle, shows that the master was for the moment perplexed. After sounding the blast of the whistle, and when ordering the vessel to go full speed astern, he also failed to sound the three blast signal indicating that such was the movement he was taking in order to avoid the collision.

The court has tried to ascertain whether there are any regulations governing the movements of ferry boats in Halifax harbor, but did not obtain any definite information. Therefore it is under the impression that the navigation in the port of Halifax, whether ferry vessel or any other vessel, is governed by the international rules of the road, and on that its opinion is based. At no time would it appear that the Chebucto was a crossing ship. Both vessels were following a course in an oblique direction, and coming to a point which proved fatal in this instance. This opinion is arrived at by the fact that no one on the Morwenna claims to have seen the sidelights of the ferry steamer, which it has been proved were lit at 5.15 that afternoon, and which



would indicate that the Morwenna was a couple of points abaft the starboard beam of the ferry. Therefore the Chebucto cannot be considered a crossing ship and expected to go astern of the Morwenna. On the other hand, the rules of the road state that it is permissible to adopt any action when a collision is inevitable, though it is contrary to the articles already framed. The master of the Morwenna, knowing the nature of the boat he was meeting, the location of the wharf where she was to enter, and the nature of the traffic she was engaged in—transporting passengers, the number of which was more or less great—it was his duty to adopt a different action to that which he did. We maintain that he ought to have gone full speed astern all along, no matter if his ship swung towards the wharf, as we maintain it would have been preferable for him to come into contact with the wharf than to risk striking a ship carrying passengers, and the fact that he dreaded striking the wharf goes to prove that he was closer to it than he stated.

The regulations governing the speed of vessels in Halifax harbor were produced, and we find by an order in council passed in 1896 that the speed is limited to 5 miles an hour, and anyone contravening this order is liable to a fine of \$100. The speed of the Morwenna was 6 or 7 knots, not exactly half speed, her full speed being 13; but in this case this regulation, being enacted by the authorities ruling matters pertaining to Halifax harbor, it does not come within our jurisdiction to comment upon. If it is a breach of the regulations, it pertains to others to deal with it. Whether the ship was going 3 miles an hour, or 5 miles, or 7 miles, it does not alter the fact that the collision occurred, and errors of judgment were committed to avoid the same.

The court cannot arrive at any other conclusion than that the master of the Morwenna is alone at fault for the collision that occurred, and in consequence suspends his certificate, no. 3136, for six months from Feb. 12 to Aug. 12, without the option of a lower grade certificate being granted. The other officers are exonerated from blame, as they did not participate as principals in the navigation of the vessel.

With regard to the Chebucto, our opinion is that the master, N. W. Allen, where a crew is limited, ought to have been taking his lunch in the forward wheelhouse, where the navigation is conducted, instead of in the after wheelhouse, as he stated. It is true that the weather was fine, and it was so for some time, and there was no occasion for the master to be right there at his station, but nevertheless we claim that when the first bell was rung, "stand by," he should immediately have come out and stationed himself by the wheelhouse and conducted the navigation of his ship for the balance of the time until she entered her dock. Although there is no negligence of duty in this matter, we still reprimand him and caution him to be more careful in the future. With regard to the mate of the Chebucto, who was at the wheel, though we hold that the Chebucto did not contribute to the collision, yet we claim there was a defective lookout kept on board that vessel, and that, moreover, the mate adopted a very dangerous practice, contrary to the orders of the administrators of the ferry boat corporation, to admit no one into the wheelhouse, and for that reason we think that, as a future warning to him, it is proper for this court to suspend his certificate for one month from Feb. 12 to Mar. 12, which may cause him to pay more attention to the rules and laws of navigation in the future. This is done with a view to acting as a deterrent for future neglect and for the safety of the passengers who are called upon to travel

between Halifax and Dartmouth and vice versa, and we trust that the ferry boat corporation will see that the orders and regulations that are framed will be carried out to the letter by their employees. We maintain that no one should be allowed in the wheelhouse where there is only one man to look after both duties of acting as wheelsman and lookout, as in this case.

### Lake Vessels Chartered for Gulf and Ocean Service.

During March various reports were current as to lake vessels which, it was stated, had been chartered for service in the St. Lawrence Gulf, to the West Indies, and for trans-Atlantic ocean service. Statements were circulated giving the names of a large number of vessels, many of which are entirely unsuitable for gulf and ocean service, and also the names of the charterers, most of which were incorrect, and practically all, misleading.

The Nova Scotia Steel and Coal Co. was stated to have chartered 26 vessels for service between Canada and the West Indies and South American ports. Thos. Cantley, Vice President and General Manager, was later reported to have stated that his company had chartered five lake steamships for carrying coal from the coast to inland points, but that no vessels had been chartered for West Indies or South American service.

We are officially advised that Canada Steamship Lines' steamships Empress of Fort William, Empress of Midland, Winona, Canadian, Acadian, D. A. Gordon, Midland Queen, Donnacona, C. A. Jaques, Dundee, Dunelm and Glenellah have been chartered for ocean service, in addition to those other of the company's vessels which have been under similar charter for two or three years. The Canadian Lake and Ocean Navigation Co.'s steamships Turret Cape, Turret Court, and Turret Crown, under the management of J. W. Norcross, Managing Director, Canada Steamship Lines, Ltd., have also been chartered. The charters are for any service for which the charterers desire to use them, some for 12 months and some for 6 months from the opening of navigation. The s.s. Turret Chief, which was mentioned in the daily press as having been chartered, was wrecked at the end of 1913. It is probable that some of the Canada Steamship Lines other vessels will be chartered, or may be operated on the ocean, but no details are available at present. None of the company's vessels have been running in ocean service during the winter, except the regular ocean vessels, which have been running full.

Of the other vessels mentioned as having been chartered, the s.s. Sindbad, owned by F. E. Hall & Co., Montreal, is under time charter to the Dominion Coal Co., operating between Nova Scotia and New England ports, but the same company's s.s. Carleton has not been chartered, and we are advised that she will probably remain in the lake trade this season. The Western Navigation Co.'s s.s. Kaministiquia has been chartered for the South Atlantic trade. The steamships W. H. Dwyer, Port Colborne and Port Dalhousie, owned by Forwarders, Limited, Kingston, Ont., have not been chartered, but will be operated in the pulpwood trade between New Brunswick and Maine ports from May to August, and after that, in the St. Lawrence grain trade. The steamships Glenmount, Stormount, Northmount, Fairmount and Westmount, owned by the Montreal Transportation Co., have been chartered for four months from May, with sailing limitations between Canada, the United States and the West Indies. The Farrar Transportation Co.'s s.s. Meaford

has been chartered for the coasting service and may be utilized in a West Indies service. We have been advised that the St. Lawrence and Chicago Steam Navigation Co. has no vessels suitable for ocean service.

A press report stated recently that the Dominion Marine Association officials had asked the Dominion Government to investigate the qualifications of masters and mates of inland vessels selected to engage in ocean going traffic, and that the Government Examiner of Masters and Mates had conducted examinations of those who had requested permission to remain with the vessels chartered for such service. We are advised that the Dominion Marine Association has no knowledge of such a request.

### Supervision of Lake and Ocean Freight Rates.

The question of the supervision of lake and ocean freight rates was raised in the House of Commons recently, on the revoting of \$6,000 in the Trade and Commerce Department's estimates. Sir George Foster explained that it had been impossible to find a man having the practical knowledge required for the position, and it was not intended to fill the position until the proper man could be found. He hoped to be able to make an appointment shortly. The \$6,000 is intended to cover salary and general expenses. The various subsidy contracts entered into with steamship companies contain a clause authorizing the Minister of Trade and Commerce to fix rates, but he had not in the department the expert assistance to enable him to do so. He had talked the matter over with the Board of Railway Commissioners, which employed expert assistance, and found that there were many things in respect of which they could co-operate if there was a traffic expert in connection with lake and ocean freight service attached to his department. The ocean services during the past six months had been very much disorganized owing to war conditions, but the department had, as far as possible, consulted with the subsidized companies in regard to rates, and he did not think they would increase abnormally, certainly they had not done so, when compared with the increases that have taken place in all other parts of the world.

**Compulsory Pilotage in British Columbia Waters.**—A press report from Vancouver states that the Vancouver Shipmasters Association is recommending some amendments to the Canada Shipping Act, one of them being the abolition of compulsory pilotage so far as it applies to British Columbia waters, it being urged that compulsory pilotage leaves the ship immune from liability when damage is done, when the court finds that an accident is solely due to the pilot in charge. It may be pointed out that Sec. 474 of the Canada Shipping Act reads as follows:—"Nothing in this part shall exempt any owner or master of any ship from liability for any loss or damage occasioned by his ship to any person or property, on the ground of either such ship being in the charge of a licensed pilot, or of such loss or damage being occasioned by the act or default of a licensed pilot, or on any other grounds."

**A Ship Masters' Association was formed** in Toronto, Mar. 17, with the following officers:—President, Capt. J. Mann; Vice President, Capt. Oscar Patterson; 2nd Vice President, Capt. W. McGlennon; Secretary-Treasurer, Capt. A. E. Stinson; Chaplain, Capt. C. Smith; Marshal, Capt. Jefferies; Warden, Capt. H. Patterson; Sentinel, Capt. Sexsmith.



## Midwinter Shipping Letter From the Head of the Lakes.

F. & W. Jones, grain, vessel and marine insurance brokers, Fort William, Ont., write:—In preparing the following summary of conditions at Fort William and Port Arthur, every care has been taken to give as accurate information as possible. Future conditions are estimated after considering all matter pertaining thereto upon the data now available, and which necessarily may be subject to change later. At a future date, when navigation is in sight, this letter will be supplemented by a further forecast of conditions.

**Coal.**—The total movement of coal to the Canadian head of the lakes during 1914 shows a big falling off when compared with former seasons, having no apparent reason beyond the cessation of immigration consequent upon the world wide financial depression. During the past years the coal consumption of Western Canada has steadily increased, and consequently each year receipts at these ports have shown a corresponding increase over previous years. 1914 receipts not only show no increase, but are considerably below those of 1913. As no definite figures are on file for 1913, the actual decrease cannot be shown, but it is estimated as approximately 2,000,000 tons.

Dispatch in vessel unloading during 1914 was exceedingly good throughout the entire season and there was no serious holdup, and only a few cases are on record when steamships waited for turn more than one day. It is quite safe to calculate that the average time for unloading a 10,000 ton steamship was from 25 to 30 working hours. Overtime was not the rule, on account of the smallness of business, and only in certain cases, when a steamship could be worked out within say four or five hours of closing time, would a dock consider overtime at all. There were, however, cases when a dock worked continuously on a steamship until discharged, but in such cases the vessel took care of the extra overtime.

The total receipts of coal at the joint ports of Fort William and Port Arthur for the 1914 season were 1,853,256 tons, composed of 1,368,535 tons bituminous and 484,721 anthracite. Receipts at Jackfish were 177,295 tons bituminous. Of the coal received at Fort William and Port Arthur, 790,570 tons were carried in Canadian bottoms and 1,062,686 tons in U.S. bottoms. The majority of coal in Canadian bottoms went to Port Arthur docks. The increase in coal carrying by Canadian vessels is probably accounted for by the fact that the number of large vessels owned and operated by Canadian companies is steadily increasing.

Coal shipments to the west during the season were fairly active. The daily shipments since the close of navigation have been around 115 cars (approximating 4,000 tons) of commercial coal, while the daily shipments of railway service coal have been about 145 cars (approximating 5,000 tons), thus bringing up the shipments to about 9,000 tons a day. With the opening of February, the western shipments dropped off slightly, following a considerable rise in temperature. Should a cold snap follow, which is anticipated, they will necessarily again pick up, and by the opening of navigation stock piles will undoubtedly be very greatly reduced.

While several docks are doing extensive repairs and readjusting to their plants during the winter, there are no indications of any material changes or improvements under way with regard to unloading machinery. The general situation, however, can be considered as eminently satisfactory, as most of the plants are of comparatively late construction and compare favorably

with those of other lake ports.

Stocks of coal on all docks at time of writing (Feb. 28) are estimated at 1,150,000 tons bituminous and 350,000 tons anthracite.

**Grain.**—The eastern movement of grain from the Canadian head of the lakes for the navigation season of 1914 totaled approximately 127,000,000 bush., and showed a very considerable decrease as compared with the shipments for the 1913 season, which reached approximately 204,000,000 bush. This decline naturally had a seriously depressing effect upon lake grain rates, with consequent unsatisfactory and unsettled conditions to the trade generally. The tonnage in Canadian and U.S. bottoms for 1913 and 1914 compares as follows, in bushels:—

	1913.	1914.
Canadian vessels .....	106,637,870	93,175,403
United States vessels.	96,606,180	33,224,473
	203,240,050	126,399,876

The figures for 1914 reveal a contrast with previous seasons by the fact that 74% of the shipments were in Canadian bottoms, and only 26% in vessels of U.S. register. In previous years the percentage of U.S. vessels has been approximately from 50% to 60%.

The following comparative statement of deliveries to Canadian and U.S. ports will be interesting as showing that approximately only 27% of the grain tonnage was delivered to U.S. ports:—

	1913.	1914.
	Bush.	Bush.
Canadian ports .....	104,852,807	90,140,031
U. S. ports .....	98,387,243	36,259,845
	203,240,050	126,399,876

There is little doubt that the whole of the shipment from both Canadian and U.S. head of the lakes was seriously disappointing to the carrying interests. The total shipments from Duluth appear to have been about 81,500,000 bush. Of this, approximately 7,250,000 were carried in Canadian vessels. As nearly as can be estimated, 3,000,000 of the 81,500,000 bush. was Canadian grain from the Northwest Provinces.

Receipts of grain at the Canadian head of the lakes from the close of navigation to the end of February were 9,250,000 bush. Of this, 6,000,000 bush. has been shipped east by all rail, leaving an accumulation of 3,250,000 bush. during the winter. This tends to show that the export demand has been mainly on storage at eastern points, and that there has been no great demand upon stocks at western terminals. The total stocks in elevator and afloat at Fort William and Port Arthur are:—

	Bush.
In store—Wheat .....	4,915,628
Oats .....	2,192,114
Barley .....	269,114
Flax .....	854,940

Afloat—Wheat .....	283,122
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Stocks at same date 1913 were:—

	Bush.
In store—Wheat .....	10,700,086
Oats .....	3,596,040
Barley .....	1,230,882
Flax .....	2,714,865

	18,241,873
Afloat—Wheat .....	4,085,630
Oats .....	2,514,311
Barley .....	334,832
Flax .....	461,017
	7,393,790

It will be noted that the present grain in store shows a decrease compared with last year of some 10,000,000 bush, while the grain afloat shows a decrease of over 7,000,000 bush.

The amount of grain in store at Winnipeg and western points is somewhat difficult to estimate, but it is generally conceded that, after making provision for feeding and seeding purposes, there will be little more than 10,000,000 bush. to come forward between

now and the opening of navigation. It will thus be seen that no large lake movement can be expected, and it is safe to compute that, although early navigation may be sharp, it will not extend beyond three to four weeks after the opening. Preparation for the 1915 crop has made great headway, and a larger quantity of summer fallow has been done than ever before. There is also a greater percentage of winter sowing, particularly in Saskatchewan and Alberta. This should all point to an early harvest, if weather conditions continue as favorable as at present. In some districts it is estimated that should normal conditions prevail, the 1915 harvest will come a good month earlier than heretofore. The increased acreage, generally speaking, is 10% in advance of last year, and probably 20% in advance of the last normal crop (1913). Thus, if the present weather continues to improve, there will be approximately 300,000,000 bush. available for lake movement in 1915. These figures can only be considered as a rough estimate and are based upon information which has come to hand with regard to acreage under cultivation, and in anticipation that favorable weather will continue. The statistics to hand tend to show that 60% of the sowing is wheat, 30% oats, balance 10% other grain.

**Package Freight.**—The situation in this phase of business is not at all promising for the coming season, and indications are that package freight steamships will have difficulty in securing sufficient upbound business for the early opening. It is persistently rumored that many of the Canadian package freighters will be sent to the Gulf of St. Lawrence to engage in coastwise trade, pending the arrival of the 1915 grain crop.

**Ore.**—The Canadian ore industry is still in a state of embryo at this end of the lakes. The mines under work are situated about 200 miles northwest of Fort William, on the Grand Trunk Pacific, and produce a pyritic ore. The output for the navigation season of 1914 was 74,554 net tons. This was carried by Canadian vessels to Chicago and Lake Erie ports. The 1915 movement of ore is expected to continue to advance, and will probably be a moderate increase over the 1913 movement.

**Dock Conditions.**—The docks have been quiet all winter. Only one boat is fully loaded, the J. H. Plummer having 52,000 bush. wheat aboard. The E. D. Carter has a part cargo of 231,130 bush. aboard.

There are altogether 10 Canadian and one U.S. steamships laid up at these ports. The Carter and Plummer have grain aboard, the Donnacona is lined up to load pulpwood ready for the opening, the Empress of Midland and Beaverton are now loading pulpwood, the Fordonian is in dry dock, the W. Grant Morden, A. E. Ames, Agawa, Glenmavis, and W. D. Rogers are all light. The Carter is the only vessel placed under the elevator spouts, so it is unlikely that any other vessel will load grain before the ice breaks up. The only improvement in grain handling facilities under way is a storage annex of 750,000 bush. to the Ogilvie Flour Milling Co.'s elevator.

**Ice Conditions.**—The ice in the river and bay is calculated to be 36 ins. thick and fairly solid. A break-up is not looked for before the end of April, and there is no indication of any attempt to hasten the opening of navigation by the use of ice-breakers.

**Admiralty Prison Ships.**—It is stated that the steamships used in Great Britain for prison vessels, during the war, were paid for at the rate of from 15s. 6d. to 17s. 6d. per ton per month, with a reduction of 6d. per ton after the first two months. For the first two months, the approximate payment was £86,000 a month, and subsequently, £83,000 a month.



### Atlantic and Pacific Ocean Marine.

The C.P.R. s.s. Montrose, which has been in Admiralty service since the commencement of the war, was reported to be ashore off Portuguese West Africa, Mar. 13.

The C.P.R. s.s. Metagama, which sailed from Liverpool, Eng., Mar. 26, on her maiden trip to Canada, attained a speed of 17½ knots an hour on her trial over a measured mile on the Clyde, early in March.

The Cairn Line s.s. Cairntorr, which is well known on the St. Lawrence route, was reported to have been torpedoed by Germans off Beachy Head in the English Channel, Mar. 21, when bound from Newcastle, Eng., to Genoa, Italy, with coal.

The Cunard Line, on Mar. 8, announced that the second class rates on its vessels crossing the Atlantic, were reduced to £10, or \$50. Announcement was made later in the month that other steamship companies in the same service had also reduced their rates to a similar amount.

Canadian Northern Steamships' s.s. Royal Edward, which has been in Admiralty service since the commencement of the war, is now being utilized as a prison vessel with the main prison fleet at Southend, England. Practically all of the prisoners on board are Germans, who, at their own request, have been given work to do caring for the vessel.

Furness Withy & Co. have been appointed agents, Canada Steamship Lines, Ltd., New York, vice A. E. Outerbridge & Co., two partners of the latter firm having accepted positions with Furness Withy & Co., thus retaining their associations with the Bermuda and West Indies service, formerly operated by the Quebec Steamship Co., now part of Canada Steamship Lines, Ltd.

The Allan Line s.s. Mongolian, outward bound from Philadelphia and St. John's, for Glasgow, returned to Halifax, Feb. 27, having sprung a leak when well out at sea. On her previous voyage she suffered some damage from ice, and certain repairs were undertaken at St. John's by a local diver under instructions from the underwriters, and it is surmised that the leak was due to a loose plate.

It was announced, Mar. 5, that the steamship Missanabie had arrived at Liverpool, Eng., and the steamships Megantic and Southland at Queenstown, Ireland, conveying the first units of the second Canadian contingent of troops for the war. The departure of the men from Canada, numbering about 4,000, was not made public. The vessels sailed from Halifax, N.S., Feb. 22, and were convoyed by the cruisers Essex and Gloria.

The shipping companies operating between Canada and Glasgow, have advanced the wages of the men standing by liners when in Glasgow, by a shilling a day, and the boiler scalers, who asked for an increase of a penny an hour, are considering the offer of the companies to an increase of half that amount. It is stated that the companies, so far as the first increase is concerned, are willing to consider it a permanent one, provided that such conditions do not arise after the war, as make it imperative for them to reopen the matter.

A federal grand jury at New York, has returned two indictments against the Hamburg-American Line and five of its employees, all Germans, on charges of conspiracy to defraud the U. S. Government through the filing at the custom house, of false records, false clearances of vessels and false manifests of cargo quoting delivery of same to false vessels. These charges were initiated on the complaint of the British Consul General, in connection with the chartering of the U. S. steamships

Berwind and Lorenzo and the Norwegian steamships Fram and Sommerstad, and the shipping of coal, etc., to South American ports.

### Maritime Provinces and Newfoundland.

The s.s. Navarra, which was wrecked near Holmes Island, N.S., Dec. 30, has been sold to a junk dealer at St. John, N.B., for \$1,000. She was under charter to the Admiralty for conveying war supplies to France.

A press report states that the Dominion Government customs cruiser Margaret, which has been engaged in duty on the St. Lawrence for some time, has been acquired by the British Government for service at Halifax, N.S.

Navigation was reported open on the Petitcodiac and Shepody Rivers, Mar. 2, the ferry boats on the Hopewell Cape and Dorchester route, and between Hopewell Hill and Harvey, having been operated on that day.

The Department of Marine has announced that the proposed replacement of the lightship on the Sambro outer banks, at the entrance to Halifax harbor, by a gas and whistling buoy, will not be made until the close of the war.

The Miramichi Steam Navigation Co.'s directors for the current year are,—Hon. J. P. Burchill, President; J. D. Creaghen, Vice President; J. D. B. F. McKenzie, J. McDonald, R. Murray, W. B. Snowball, R. A. Snowball, H. B. McDonald is Secretary-Treasurer and Manager.

Replying to a question in the House of Commons, recently, the Minister of Trade and Commerce stated that during 1914 the Gaspe and Baie des Chaleurs Steamship Co. was paid \$9,615.25 for a steamship service between Montreal and Campbellton, N. B., the amount being computed at \$384.61 a trip.

### Province of Quebec Marine.

The Inland Revenue Department will receive tenders to Apr. 12 for a ferry service across the Ottawa River between Fitzroy, Ont., and Onslow, Que.

Work on the dry dock at St. Joseph de Levis will, it is reported, be recommenced as soon as weather permits. The contractors are M. P. and J. T. Davis.

The Minister of Marine stated in the House of Commons, Mar. 19, that the work in progress in the St. Lawrence ship channel, included deepening from 30 to 35 ft. and widening it from 300 to 500 ft., between Quebec and Montreal, and also straightening it in several places. The commission which had reported on the lowering of the water level found that at Montreal it was down 31 ins., and that, of this, some two or three inches was due to the Chicago drainage canal, and the rest due to work in the St. Lawrence ship channel, chiefly the removal of obstructions at St. Mary's Rapids, just below Montreal harbor. Farther down the river the lowering was less. The material dredged from the channel could be used for damming some unused channels near Lake St. Peter and elsewhere and thus help to raise the water level. These works would cost about \$400,000.

### Ontario and the Great Lakes.

The name of the s.s. E. M. Peck, no. 130,439, registered at Sarnia, has been changed to Malton.

An order in council has been passed establishing a permanent harbor quay line at Sault Ste. Marie, beyond which line, break-

waters, wharves, piers and other structures shall not be built.

The Great Lakes Transportation Co., which purchased the s.s. Howard M. Hanna, Jr., formerly owned by the Hanna Transit Co., Cleveland, Ohio, is having its name changed to Glenshee.

The Georgian Bay Shipbuilding and Wrecking Co., Midland, has built a marine railway capable of dealing with vessels 150 ft. long and to partially dock, to the extent of 100 ft., larger vessels for stern and lower repairs.

The Dominion Parliament has extended the time for the commencement and completion of the work for which the Montreal, Ottawa and Georgian Bay Canal Co. was chartered. Considerable opposition to a further extension was shown.

The Department of Marine is establishing, for the opening of navigation, the Stag Island gas buoy no. 5, in 23 ft. of water to mark the bend in the St. Clair River below Stag Island. An occulting white light will be exhibited, visible for 5 secs. and eclipsed 5 secs. alternately.

The Dominion Public Works Department has awarded a contract for the construction of 2,000 ft. of breakwater on the Mission River, at Fort William, to the Thunder Bay Contracting Co. It is stated that work will be commenced immediately on the opening of navigation. It is estimated that it will cost \$250,000.

The Village of Fort Erie, Ont., obtained judgment, by consent, against the Fort Erie Ferry and Ry. Co. at Welland, Mar. 3, for specific performance of agreement regarding service. If the company fails to carry out the agreement, it forfeits \$2,000 under a bond.

The Hamilton City Council has decided to continue the grant of \$5,000 to the Harbor Commissioners, although there was some opposition to it. The Commissioners had prepared a tariff of fees for all vessels using the harbor in case the Council decided against continuing the grant.

An announcement from the U.S. Lake Survey office states that there is a clear depth of 34 ft. over the wrecked s.s. Charles S. Price, which went down in Lake Erie during the November, 1913, storm, and that it is no longer a menace to navigation. The gas buoy which marked the location of the wreck last season will not be replaced.

The Dominion Parliament has extended the time within which the Montreal, Ottawa and Georgian Bay Canal Co. may commence and complete the works for which it was incorporated. The extension granted provides that the company may commence the work by May 1, 1918, and complete same by May 1, 1924.

It is reported that the Trent Valley Canal will be opened between Peterborough and Trenton, for light draught vessels, this spring, and it is possible that vessels of fairly deep draught will be able to use the canal there at a little later date, dependent on the completion of some dredging.

It is announced that work has been started on the building of a new wooden wharf at Sarnia for Northern Navigation Co. and G.T.R. traffic. The old wharf is being demolished, and the new one, which will be 800 ft. long, will be of a more modern type. The work is being done by the G.T.R., and it is expected will be completed in time for the reopening of navigation.

The s.s. John Sharples, which was wrecked in Lake Ontario about three years ago, and was salvaged by the Reid Wrecking Co., is reported to have been sold to



a company operating on the Atlantic coast. She was built at West Superior, Wis., in 1903, and is a steel vessel, with triple expansion engines with cylinders 14, 25 and 42 by 30 ins., 650 i.h.p. Her dimensions are, length 241 ft., breadth 41 ft., depth 18 ft.; tonnage, 1,614 gross, 919 register.

The Cabotia Steamship Co.'s s.s. Cabotia, which has been lying at Toronto for some time, is to be sold. She is a wooden vessel and was built at Gibraltar, Mich., in 1880. Her dimensions are, length 234 ft., breadth 36 ft., depth 30 ft.; tonnage, 1,530 gross, 930 register. She is equipped with fore and aft compound engine of 700 i.h.p., with 85 r.p.m., with cylinders 21 and 50 by 46 ins., supplied with steam by a Scotch boiler 12 by 12½ ft. at 125 lbs.

The C.P.R. steamship service on the Great Lakes will be performed this season by the steamships Keewatin, Manitoba, Alberta and Assiniboia, which will leave Port McNicoll, in the order named, on Tuesdays, Wednesdays, Thursdays and Saturdays, and Fort William on Fridays, Saturdays, Sundays and Tuesdays. The service will commence May 21 on schedule, and possibly prior to that, regardless of schedule, as the occasion may warrant. The s.s. Manitoba will call at Owen Sound on Wednesdays on the westbound trip.

The U. S. Lake Survey reports the levels of the Great Lakes in feet above tidewater for February, as follows.—Superior 601.70; Michigan and Huron 579.54; Erie 571.41; Ontario 244.99. Compared with the average February levels for the past ten years, Superior was 0.09 ft. below; Michigan and Huron 0.54 ft. below; Erie 0.27 ft. below and Ontario 0.78 ft. below. It was anticipated that during March Superior would be 0.2 ft. lower, that Michigan and Huron would remain stationary, and that Erie and Ontario would be 0.1 ft. higher.

The Windsor-Detroit-Wallaceburg Steamship Line, Windsor, has chartered the s.s. Olcott from the Peninsular Steamship Co., Sandusky, Ohio, for operations between the points named, for the 1915 season, which it will open about June 10. The Olcott is a steel vessel, built at Toledo, Ohio, in 1901 and lengthened in 1906. Her dimensions are, length 148.5 ft., breadth 28 ft., depth 12 ft.; tonnage, 337 gross, 229 register. She is equipped with fore and aft compound engines, with cylinders 18 and 42 by 24 ins., and has i.h.p. of 800 at 150 r.p.m. Steam is supplied by a Scotch boiler, 13 ft. 9 ins. diam. by 11½ ft. long, at 180 lbs. pressure.

### Manitoba, Saskatchewan and Alberta.

The Manitoba Legislature is dealing with a bill defining the Winnipeg and St. Boniface Harbor Commissioners' powers.

The Peace River Tramway and Navigation Co. proposes to build a steamboat this year at Peace River Crossing, Alberta. It will be 165 ft. long and 35 ft. beam, with accommodation for 110 cabin passengers and 300 tons freight. The engine cylinders will be 20 by 84 ins. and will develop about 800 nominal h.p.

### British Columbia and Pacific Coast.

The s.s. Curacoa, which was salvaged last September after having been submerged in Alaskan waters for over a year, is being repaired at North Vancouver.

The C.P.R. s.s. Princess Margaret, one of the two vessels recently completed for the C.P.R. coast service, and which were taken from the builders for Admiralty requirements, is stated to be in scouting service in the North Sea, where her speed makes her of excellent use.

The Fort George Lumber and Navigation Co. is proceeding against the G.T. Pacific Ry. to recover damages for the alleged interference with the navigation of the Fraser River, at a point near Fort George, B.C., where it is stated the G.T.P.R. has placed a temporary bridge across the river to carry its line into Fort George.

The progress of the construction of a jetty at the entrance to the north arm of the Fraser River has necessitated the temporary discontinuance of the outer fixed white light. A temporary fixed white light will be exhibited on the extreme of the jetty as it is built seaward, and further notice will be given when the work is completed.

The Geographic Board has decided that the northerly entrance channel of the Skeena River, extending westward from Eleanor Passage to Chatham Sound, and lying eastward, northward and westward of Smith Island, shall be called Inverness Passage, and not North Skeena Passage, North Skeena Pass, nor The Slue, as hitherto.

The members of the Vancouver Branch of the International Longshoremen's Union struck work March 1, when asked to consent to a reduction of 10c. in the wage schedule. It was announced that slingers would be paid 35c. an hour, and truckers 30c. an hour, instead of 45c. and 40c. respectively as heretofore. The vacancies were quickly filled, as there were quite a number out of work in the city.

### The Transportation of Supplies to the War Zone.

The Dominion Government and the Admiralty have arranged for a tri-weekly service between Canada and France, chiefly for the conveyance of war supplies and equipment from this continent to the war zone. It is stated that the Admiralty has undertaken to provide 18 freight vessels for the service until the conclusion of the war. Since the commencement of hostilities, the materials and food supplies purchased on this side have steadily increased, until it has become necessary to establish a regular service.

At the beginning of the war, the C.P.R. placed the services of A. H. Harris, its Special Traffic Representative, at the Government's disposal, and he has since acted as Director of Overseas Transport in connection with the shipment of troops and war supplies. It is stated that he will continue to act in that capacity in connection with this special war service.

**The Newfoundland Sealing Disaster of 1914.**—The commission, consisting of Chief Justice Horwood, Justices Emerson and Johnson of the Newfoundland Supreme Court, which was appointed to enquire into the disaster to the sealing fleet off the coast in the spring of 1914, when 248 lives were lost, has made its report. In the case of the s.s. Newfoundland, regarding the loss of 73 of the crew, it was held by a majority of the commissioners that Capt. A. Kean of the s.s. Stephano committed a grave error of judgment, and G. Tuff, chief officer of the s.s. Newfoundland, an error of judgment. Justice Johnson dissented, giving his opinion that neither was to blame. In the case of the loss of the s.s. Southern Cross with 175 men, it was decided that it could only be attributed to the perils of the sea.

The North Pacific Coast Passenger Agents' Association met at Bellingham, Wash., Mar. 10, and arranged summer excursion fares. The next meeting will be held at Tacoma, Wash., May 12.

### Mainly About Marine People.

R. W. Thom, station agent, G.T.R., Colingwood, Ont., has also been appointed local agent, Northern Navigation Co. there.

Capt. J. W. Hatherly, of the Allan Line s.s. Mongolian, was killed, Mar. 17, when a crane struck him as he was superintending repairs being made to the vessel at Halifax, N.S.

Jas. Wainwright, Assistant Harbor Engineer, Toronto, will have charge of the harbor work undertaken by the Harbor Commissioners at Toronto, during the absence of E. L. Cousins, who is preparing plans for a rapid transit system for Toronto.

Sir Stephen Furness, Chairman, Furness, Withy and Co., and one of the advisory board of Canada Steamship Lines, Ltd., in London, Eng., who died in Sept., 1914, left unsettled property of the gross value of £213,077, the net personalty being stated as £165,980.

Lt. Col. Lindsay, of the Dominion Marine Department, and Lt. Col. G. P. Murphy, of the Ottawa Transportation Co., were in charge of the embarkation of the first detachment of the second Canadian contingent which sailed from Halifax, N.S., and arrived at Queenstown and Liverpool, Mar. 4.

**All Red Route.**—The Imperial Parliament will not have before it this session the bill for the building of a short railway in Ireland, which it is proposed shall form a link in what is called the All Red Route round the world, the promoters having failed to comply with the standing orders respecting the introduction of bills.

**Special Dominion Taxation.**—The Finance Minister's proposals to increase the amounts to be received from taxation were given in our last issue. Since then the matter has been discussed in the House of Commons, and a number of changes made. Press dispatches are made exempt from the tax of 1c. on each message for which a minimum charge of 15c. is made, and the proposed tax on steamship tickets has been extended to include tickets sold for the West Indies, which were at first excluded, and the tax itself is changed to \$3 if the amount chargeable for passage exceeds \$40, instead of \$30, and \$5, if it exceeds \$65, instead of \$60.

The Department of Marine has issued lists of gas buoy lights on the Atlantic coast, the Gulf of St. Lawrence, navigable waters in Quebec and Ontario, and British Columbia, and has announced that in connection with the rearrangement of gas buoy and gas beacon lights, whereby red occulting lights will be exhibited on the starboard side and white occulting lights on the port side in going upstream, the lights so listed will be changed as follows:—On the Atlantic coast and the Gulf of St. Lawrence, between Apr. 15 and May 31; Quebec and Ontario, on the opening of navigation; British Columbia, between Apr. 15 and May 31.

**Transfer of Canadian Registered Vessels to Foreigners Forbidden.**—An order in council has been passed under the provisions of the War Measures Act, 1914, ordering that a transfer made after Mar. 9 of a British ship registered in Canada, or a share therein, to a person not qualified to own a British ship, shall not have any effect unless the transfer is approved by the Minister of Marine, and that any person who makes or purports to make such a transfer without this approval shall for each offence incur a penalty of a fine not exceeding \$5,000 or imprisonment not exceeding five years, or both fine and imprisonment, either on summary conviction or indictment. The order will continue during the war.



### The British Premier on the Rise in Freight Rates.

In the course of a debate in the British House of Commons recently, the Prime Minister, in dealing with the increased cost of food supplies, said,—

"The difficulties of transport and the rise in freights, has been a factor of considerable importance, but by no means the main factor, and I am not sure that an exaggerated value has not been attributed to it in some quarters. Experts in these matters are accustomed to take what is called No. 1 Northern Manitoba wheat as the standard. The price in Liverpool of that quality of wheat rose between July, 1914, and Jan., 1915, from 36s. 3d. to 57s. 11d. a quarter, in round figures 22s. Of that 22s. 18s. 6d. is to be attributed to the increased price in New York, and only 3s. 6d. to the increased freight between New York and Liverpool. In regard to the question of transport both by sea and by land, it may fairly be said that it is within the power of the Government to do something really effective to ease the situation. Dealing with the question of ships, the situation is unique and absolutely unprecedented. First of all, we have had withdrawn from the carrying service the whole of the shipping of Germany, Hungary and Austria. I do not believe there is a German ship now sailing the seas. That, of course, has had its effect. These countries possess 14% of the merchant shipping of the world. That is gone. Another fact is that the Admiralty is employing for necessary purposes, such as the transport of men, stores, munitions, and supplies, one fifth of our British tonnage, which means 10% of the whole world. These two things in themselves account for a great deal of the curtailment of the shipping industry. The shortage is also due to ships not being in the right place, but ship-owners with whom we have been in consultation maintain that when things have shaken down there will be no serious shortage of tonnage, as the process of the readjustment of routes is going steadily on. Therefore we have reason to believe that in the course of a very short time, perhaps in a few weeks, there will be an adaption of available ships to routes and necessities which ought to dominate the situation.

I have spoken of the release of 20 vessels, and now of 14, for the purpose of carrying coal. Nine vessels of considerable coaling capacity at present occupied by prisoners of war will be released from that service. Other vessels similarly employed may be released later. Steps are being taken in consultation with the Admiralty to secure the most economical employment of the ships they have chartered. We hope, by concert between the Admiralty and a small body of persons of experience and skill in the management of merchant shipping that the demand of the Admiralty for military and warlike purposes upon British shipping may be so adjusted, whenever opportunity offers, that ships will be set free for the carrying of cargoes. Another point to which a great deal of attention is paid is the acceleration of the proceedings of the prize courts, especially abroad. There has been a good deal of delay in some cases between the seizure of the ships and the ultimate decision, and we have done what we could to produce more accelerated procedure."

The Dominion Government s.s. Earl Grey, it was stated in the House of Commons recently by the Minister of Marine, was sold to the Russian Government for \$493,000. Her original cost, completed and ready for sea, was \$616,690.97.

### The Cost of Transporting Canadian Troops.

A return brought down in the House of Commons recently shows the amounts paid for the various steamships engaged in the transportation of the first contingent of Canadian troops which were sent to England last October. The Government assumed all the expense of fitting the vessels for transportation purposes, and for equipping them with food supplies, the amount on the average being about equal to the amount of the hiring. Following is a list of the vessels engaged, with the amount paid to each:—

Alaunia .....	\$65,237	Manitou .....	\$30,461
Arcadian .....	21,751	Megantic .....	36,198
Athenian .....	42,184	Monmouth .....	9,915
Audanian .....	48,928	Montezuma .....	20,342
Bermudian .....	20,184	Montreal .....	21,033
Canada .....	45,819	Royal Edward .....	45,080
Caribbean .....	14,171	Royal George .....	54,243
Cassandra .....	39,590	Ruthenia .....	17,992
Corinthian .....	17,841	Saxonia .....	69,578
Devonian (cancelled) .....	1,938	Scandinavian .....	29,440
Franconia .....	66,247	Scotian .....	25,116
Gramplan .....	26,635	Sicilian .....	17,831
Ivernia .....	26,436	Tunisian .....	25,734
Lakonia .....	22,805	Tyrolia .....	13,335
Lapland .....	39,056	Virginian .....	26,175
Laurentic .....	72,464	Zealand .....	28,964
Manhattan .....	34,142	Total .....	\$1,124,915

**A Correction.**—In Canadian Railway and Marine World's report of the Dominion Marine Association's annual meeting at Ottawa, on pg. 111 of the March issue, it was stated that the association, in conjunction with the Canadian Lake Protective Association, had voted \$750,000 to be divided between the Red Cross Society and the Belgian Relief Fund. The amount voted was \$750, and not as stated. The mistake was noticed in proof reading, but, unfortunately, was not corrected in the type.

**Steamships and the Board of Railway Commissioners' Jurisdiction.**—The bill to amend the Railway Act, which was introduced in the House of Commons recently by J. E. Armstrong, M.P., and which had for its main object the placing of steamship traffic under the Board of Railway Commissioners' jurisdiction, was dealt with by the railway committee of the House, Mar. 17, and after the Minister of Railways stated that the bill could not be proceeded with this session, on account of pressing legislation of a general character, it was withdrawn.

**British Shipping Casualties.**—The British Board of Trade returns of shipping casualties for February show that the ordinary risks were responsible for the loss of a larger number of vessels than were the risks of war. During the month, 33 vessels were lost, aggregating 34,947 net tons. Of these, 9 steamships of 12,389 tons were sunk by submarines, and one steamship of 2,605 tons was sunk by a German mine. The lives lost during the month were 97, of which six were due to losses occasioned by submarines.

**Huntsville, Lake of Bays and Lake Simcoe Navigation Co.**—The annual meeting was held at Huntsville, Ont., Feb. 25. The report is not made public, but we are officially advised that the balance in hand from the season's operations was placed to the credit of profit and loss, no dividend being declared. The directors were re-elected. The officers for the current year are C. O. Shaw, Huntsville, President; H. Foster Chaffee, Brockville, Ont., Vice President; W. J. Moore, Huntsville, General Manager and Secretary; J. W. McKee, Huntsville, Treasurer.

The Northern Construction Co. has surrendered its charter of incorporation under the Ontario Companies Act

### Grain in Store at Terminal Elevators, Interior Terminal Elevators and at Public Elevators in the East.

Week ended March 18, 1915.	Wheat, bushels.	Oats, bushels.	Barley, bushels.	Flax, bushels.	Totals, bushels.
Port William:—					
C.P.R. ....	159,193	57,045	15,601	3,547	235,386
Consolidated Elevator Co. ....	356,497	257,156	50,477	115,984	780,114
Empire Elevator Co. ....	430,395	283,926	40,378	133,792	888,491
Ogilvie Flour Mills Co. ....	658,553	58,971	23,986	.....	741,510
Western Terminal Elevator Co. ....	456,828	154,471	9,159	282,595	903,053
G.T. Pacific .....	587,759	414,241	24,386	99,460	1,125,846
Grain Growers' Grain Co. ....	1,120,398	353,041	32,779	.....	1,506,218
Port William Elevator Co. ....	394,034	246,518	51,503	66,469	758,524
Eastern Terminal Elevator Co. ....	206,169	143,222	18,893	.....	368,284
Port Arthur:—					
Port Arthur Elevator Co. ....	2,034,510	681,130	66,011	108,950	2,890,601
D. Horn & Co. ....	9,322	6,502	.....	44,959	60,783
Dominion Government Elevator ..	226,927	75,933	3,449	86,736	393,045
Grain afloat .....	283,132	.....	.....	.....	283,132
Total Terminal Elevators .....	6,923,717	2,732,156	336,622	942,492	10,934,987
Saskatoon Dominion Government Elevator .....	724,038	242,938	11,780	1,440	980,196
Moosejaw Dominion Government Elevator .....	665,395	456,677	13,318	.....	1,135,390
Total Interior Terminal Elevators .....	1,389,433	699,615	25,098	1,440	2,115,586
Depot Harbor .....	.....	83,979	.....	.....	83,979
Midland:—					
Aberdeen Elevator Co. ....	181,442	87,553	.....	.....	268,995
Midland Elevator Co. ....	.....	.....	.....	.....	.....
Tiffin, G.T.P. ....	161,390	336,264	.....	.....	497,654
Port McNicholl .....	615,235	192,561	.....	38,544	846,340
Collingwood .....	14,347	.....	.....	.....	14,347
Goderich .....	*113,441	.....	.....	.....	*113,441
Goderich .....	358,846	158,637	.....	.....	517,483
Kingston:—					
Montreal Transportation Co. ....	15,076	.....	.....	.....	15,076
Commercial Elevator Co. ....	30,986	51,144	.....	.....	82,130
Port Colborne .....	236,929	141,862	92,216	*28,984	499,991
Prescott .....	.....	.....	.....	.....	.....
Montreal:—					
Harbor Commissioners No. 1 ....	162,867	.....	.....	.....	162,867
Harbor Commissioners No. 2 ....	91,080	450,424	9,078	.....	550,582
Montreal Warehousing Co. ....	3,273	128,850	9,662	.....	141,785
Quebec Harbor Commissioners .....	3,994	118,648	.....	.....	122,642
West St. John, N.B. ....	548,992	213,941	1,164	.....	764,000
Halifax, N.S. ....	†	†	†	†	†
Total Public Elevators .....	2,537,898	2,002,866	112,420	67,528	4,720,712
Total quantity in store .....	10,851,048	5,434,637	474,140	1,011,460	17,771,285
*Grain afloat in vessels. †Corn. Not reported.					



## Telegraph, Telephone and Cable Matters.

Sir Henry M. Pellatt, Toronto, has been elected President, Dominion Telegraph Co., vice Thos. Swinyard, whose death was announced in our last issue, and Sir John Gibson was elected a director to fill the vacancy on the board. Aemilius Jarvis, Toronto, is Vice President for the current year.

O. A. Jorgenson, heretofore agent, C.P.R. Telegraphs, Port Arthur, Ont., has been appointed agent at Regina, Sask. He went to Port Arthur from Winnipeg as an operator in 1911, and was appointed local manager there in 1912. During last year, the title of local manager in connection with the company's telegraph system, was discarded in favor of that of agent.

In consequence of the merger of the Great North Western Telegraph Company and the Canadian Northern Railway telegraph interests, details of which have already been published in Canadian Railway and Marine World, the G.N.W.T. Co.'s Winnipeg office has been closed and the business transferred to the C.N.R. office. H. McConkey Superintendent, C.N. Railway telegraphs and electrical plant, is also Superintendent in charge of the outside work, G.N.W.T. Co.; J. Padington is Superintendent, Manitoba District and Manager, Winnipeg office, and B. S. Rounds is chief operator, Winnipeg.

At the recent annual meeting of the Bell Telephone Co. of Canada, C. F. Sise, President, retired, and was elected chairman of the Board. The board for the current year is as follows: C. F. Sise, Chairman; L. B. McFarlane, President; Hon. Robt. MacKay, Vice President; T. N. Vail, R. Archer, Hugh Paton, C. Cassils, Z. A. Lash, U. N. Bethell, C. F. Sise, Jr., A. J. Daves and T. Ahearn. The last two were elected in place of W. R. Driver and H. B. Thayer, resigned.

A press report from St. John's, Nfld., states that what is probably the largest and most powerful wireless telegraph station in the world, is to be erected near there. This, it is said, is to be done by the Marconi Co., under contract with the British Government. It is stated that about 50 acres of land has been acquired, that some of the material has arrived, and that work will be commenced at once, and the station be completed ready for operation in six months.

The Maritime Telegraph and Telephone Co.'s report for 1914 shows a surplus of \$2,170, compared with \$6,804 for the previous year, and a balance to the credit of surplus account of \$10,853. The total receipts were \$631,687, the net revenue being \$113,165, against \$101,527 in 1913. The operating expenses were \$216,543; maintenance and replacement, \$214,669; bond interest, \$73,576, and miscellaneous, \$13,733. At the annual meeting, Feb. 9, at Halifax, N.S., G. F. Pearson and A. MacKinlay were elected directors in place of R. E. Harris and H. R. Silver, resigned.

## Among the Express Companies.

Of the Dominion Ex. Co.'s employes, 112 have enlisted for active service during the war.

A. D. Gillies, heretofore depot agent, Canadian Ex. Co., Winnipeg, has been appointed agent at Prince Rupert, B.C., vice T. C. Chalmers resigned.

J. G. Bradley, heretofore in the Canadian Ex. Co.'s customs department at Winnipeg, has been appointed depot agent there, vice A. D. Gillies transferred.

L. G. Goodge, heretofore chief clerk to Assistant Superintendent, Dominion Ex. Co., St. John, N.B., has been appointed agent at Charlottetown, P.E.I.

The Adams Ex. Co. has been authorized to carry on its business in the Province of Quebec, with head office at Montreal, and J. W. Cook as its attorney.

The Board of Railway Commissioners has approved collection and delivery limits for the Canadian Northern and American Ex. Cos., in Fort Frances, Ont.

R. E. M. Cowie, heretofore Manager, Pacific Department, American Ex. Co., has been appointed Vice President and General Manager, Eastern Lines, vice, H. S. Julier, retired. Office New York.

The Canadian Northern Ex. Co. has closed its offices at Banning and Devlin, Ont.; Beaver, Berton, Brunkild, Homewood, Neelin, Rosebank, Underhill and Warren, Man.; Ridpath and St. Gregor, Sask., and Lavoy, Alta.

In the case of the C.P.R. against the owners of the s.s. Storstad in connection with the sinking of the s.s. Empress of Ireland last year, one of the claims which has been filed against the silver salvaged from the sunken vessel, is one of the Canadian Ex. Co., for \$1,037.

H. S. Julier, Vice President and General Manager, American Ex. Co., has retired after practically 60 years in the company's service. He commenced service in 1855 as office boy at Goderich, Ont., and in 1860 was transferred to Brantford, Ont., as clerk, being later transferred to Buffalo, N.Y., and subsequently to Cleveland, Ohio, and in 1887 to New York, as Assistant General Manager, Eastern Division, and Assistant to the President. On his retirement he was presented with a gold watch by the officials of the Eastern Division.

The Canadian Ex. Co., during February, celebrated its 50th anniversary, having been granted letters patent by the Dominion Government in Feb., 1865. The original name was the British American Express Co., which was established in the early 50's, when it operated a stage line during the winter, supplementing this with steamboat connections during the months when navigation was possible. The Canadian Ex. Co. is therefore older than the G.T.R. over which it operates, and the G.T.R. was the second railway to be opened for traffic on this continent. In 1858 a branch office was opened in Liverpool, Eng., and for several years this was the only express company with its headquarters in America, having an office in Great Britain.

The British Columbia Ex. Co. is suing the Inland Ex. Co. for \$6,900, stated to be due as freight charges on freight carried between Ashcroft and Fort George, B.C., under a contract whereby the plaintiff company was to carry mail and express matter between these points. It is stated that on account of the scarcity of express matter, the company was expected to carry farm produce, and the question has arisen as to whether 60,000 lbs. of oats can be considered as express matter. The Inland Ex. Co. is counterclaiming for \$3,700 extra freight charges stated to have been incurred owing to the refusal of the plaintiff company to continue the contract, and for a further \$5,000 as general damages. There has been considerable disagreement between these two companies since the British Columbia Ex. Co. sold a portion of its business to the Inland Ex. Co. in the latter part of 1914.

## Transportation Conventions in 1915.

April.—American Association of Passenger Traffic Officers, San Francisco, Cal.

April.—American Association of Demurrage Officers, Richmond, Va.

Apr. 28.—Association of American Railway Accounting Officers, Atlanta, Ga.

May 4-7.—Air Brake Association, Chicago, Ill.

May 12.—American Association of General Baggage Agents, Los Angeles, Cal.

May 17-19.—Railway Storekeepers' Association, Chicago, Ill.

May 17-20.—International Railway Fuel Association, Chicago, Ill.

May 19.—Association of Railway Claims Agents, Galveston, Tex.

May 19.—American Railway Association, Atlantic City, N.J.

May 18-21.—American Association of Freight Agents, Richmond, Va.

May 20-21.—American Association of Railroad Superintendents, San Francisco, Cal.

May 26-28.—Master Boiler Makers' Association, Chicago, Ill.

June 9-11.—American Railway Master Mechanics' Association, Atlantic City, N.J.

June 14-16.—Master Car Builders' Association, Atlantic City, N.J.

June 15.—Train Despatchers' Association of America, Minneapolis, Minn.

June 16.—Freight Claim Association, Chicago, Ill.

June 22-25.—Association of Railway Telegraph Superintendents, Rochester, N.Y.

June 23-25.—Association of Transportation and Car Accounting Officers, Niagara Falls, N.Y.

July.—American Railway Tool Foremen's Association.

July 14-17.—International Railway General Foremen's Association, Chicago, Ill.

Aug. 17.—International Railroad Master Blacksmiths' Association, Philadelphia, Pa.

Aug. 19, 20.—American Association of Railroad Superintendents, San Francisco, Cal.

Sept. 14-16.—Roadmasters' and Maintenance of Way Association, Chicago, Ill.

Sept. 14-17.—Master Car and Locomotive Painters' Association of the United States and Canada, Detroit, Mich.

Sept. 21-24.—Railway Signal Association, Salt Lake City, Utah.

October.—American Association of Dining Car Superintendents.

Oct. 4, 5.—American Association of Travelling Passenger Agents, Boston, Mass.

Oct. 4-8.—American Electric Railway Association, San Francisco, Cal.

Oct. 5-7.—Railway Fire Protection Association, Chicago, Ill.

Oct. 13-15.—American Association of Railway Surgeons, Chicago, Ill.

Oct. 19-21.—Maintenance of Way and Master Painters' Association of the United States and Canada, St. Louis, Mo.

Oct. 19-21.—American Railway Bridge and Building Association, Detroit, Mich.

## Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

Canadian Car Service Bureau—J. Reilly, Manager, 401 St. Nicholas Building, Montreal.

Canadian Electric Railway Association—Acton Burrows, 70 Bond Street, Toronto.

Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadian Express Building, Montreal.

Canadian Freight Association (Western lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.

Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday each month, 8.30 p.m., except June, July, and August.

Canadian Society of Civil Engineers—C. H. McLeod, 176 Mansfield St., Montreal.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Central Railway and Engineering Club of Canada—C. L. Worth, 409 Union Station, Toronto. Meetings at Toronto, 3rd Tuesday each month, except June, July, and August.

Dominion Marine Association—F. King, Counsel, Kingston, Ont.

Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.

Express Traffic Association of Canada—W. H. Burr, Chairman, Toronto.

Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.

Hydro-Electric Railway Association of Ontario, T. J. Hannigan, Guelph, Ont.

International Water Lines Passenger Association—M. R. Nelson, New York.

Niagara Frontier Summer Rate Committee—James Morrison, Montreal.

Nova Scotia Society of Engineers—A. R. McCleave, Halifax, N.S.

Quebec Transportation Club—A. F. Dion, Quebec.

Ship Masters' Association of Canada—Capt. E. Wells, 45 St. John Street, Halifax, N.S.

Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.

Western Canada Railway Club—Louis Kon, Box 1707, Winnipeg. Meetings at Winnipeg, 2nd Monday each month, except June, July, and August.



## Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

F. H. Hopkins & Co., railway and contractors' supplies, Montreal, have been appointed sole selling agents for the Dominion, for contractors' hoisting engines, etc., built by the Napanee Iron Works, Napanee, Ont.

General Railway Signal Co., of Canada.—S. G. Johnson, Vice President, General Railway Signal Company, Rochester, N.Y., in charge of sales and installations, has been elected a director of the General Railway Signal Company of Canada, Ltd., Lachine, Que.

Robert W. Hunt and Co., Ltd., Bureau of Inspections, Tests and Consultation, Montreal, announce the appointment of Chas. Warnock as Manager and Treasurer, succeeding C. C. Whittier, transferred to Chicago office.

Government Compensation for Merchant Seamen injured during hostilities, is provided by new arrangements made by the British Board of Trade. The Board is also continuing the insurance, at reduced rates, of fishing vessels against war risks.

## CANADIAN PACIFIC RAILWAY COMPANY

## ONTARIO DIVISION

## NOTICE TO CONTRACTORS.

SEALED tenders will be received by the undersigned up to noon, 10th April, 1915, for the construction of four concrete piers and two concrete abutments at Bridge 107.2, Muskoka Subdivision, over Shaw's Creek, about 7½ miles south of Bala. Forms of tender may be obtained, and plans and specifications seen at the office of the Resident Engineer, Room 510, Union Station, Toronto, or from the undersigned.

A. L. HERTZBERG, Division Engineer.  
Toronto, 20th March, 1915.



## DEPARTMENT OF THE NAVAL SERVICE.

## PATROL SERVICE.

SEALED TENDERS, addressed to the undersigned and endorsed "Tender for Patrol Service," will be received up to noon on Monday, April 5th, for the charter of several vessels for Patrol Service on the Eastern Coasts of Canada during the season of summer navigation, 1915.

Vessels offered should be of the Seagoing Tug or Trawler type, and from 125 to 175 feet long, speed 9 to 10 knots, and should be in good serviceable condition in all respects.

Vessels fitted with trawlers Winches will receive prior consideration.

Owners desiring to charter vessels conforming to the above description are requested to

communicate full particulars, and if possible plans of the vessels offered.

The terms of charter are as follows:—

Owners to supply Officers and Crew, board, all stores and accept ordinary Marine Risk.

Department to pay for fuel and carry War Risk.

G. J. DESBARATS,

Deputy Minister of the Naval Service.

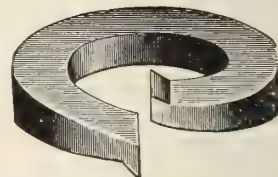
Department of Naval Service,

Ottawa, March 17th, 1915.

Unauthorized publication of this advertisement will not be paid for.—76848.

MARINE SUPERINTENDENT of wide experience and with college training, familiar with design and upkeep of hulls, engines and boilers, first-class certificate, desires position. Box 117, Canadian Railway and Marine World.

The Positive Lock Washer  
is the BEST Nut LOCK for all purposes



We also make plain coils and tail nut locks

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Builders of

ELECTRIC CARS, FINE  
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has "made good" in popular opinion

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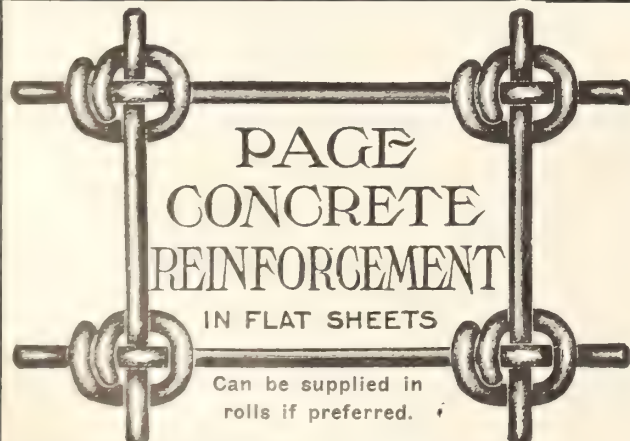
E. L. Drewry, Ltd., Winnipeg

## The Preston Car & Coach Co., Limited

PRESTON, ONT.

MANUFACTURERS OF

Steam and Electric  
Railway Cars and  
Special Cars.



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CONCRETE  
REINFORCEMENT  
IN FLAT SHEETS

Can be supplied in  
rolls if preferred.

## FOR CONCRETE ROAD PAVEMENT, WALKS, BUILDING FLOORS, ETC.

We are the originators of this wire reinforcement in flat sheets, and it is coming into universal use wherever introduced. We have supplied many carloads of it this past season.

The standard mesh for road pavement is 6 x 12 inches; for bridges and building floors, the standard is 3 x 6 inches. Also, other meshes as desired. All sheets 4 feet wide, and any length specified that can be loaded in cars.

Samples will be sent upon request.

We also supply Iron Fences, Fire Escapes, Office Wire Work, and all kinds of Builders' Wire and Iron Work

## THE PAGE WIRE FENCE CO., Limited

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**FABRIKOID**  
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Car Curtains  
and Upholstery



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**FABRIKOID**  
Curtains on  
this Car

## *It's Weatherproof and Durable*

Wind and storm beat in vain against DU PONT FABRIKOID CURTAINS. Fabrikoid is weatherproof. Rain won't shrink it—it's **impervious to moisture**. In fact you can freely use soap and water on it, which cleans it perfectly. Dust and dirt can't cling to its

smooth surface, nor catch in cracks. Because it **doesn't crack—nor peel—nor flake**. It's sanitary, durable and rich in appearance. Yet its cost is low—its **maintenance still lower**. Economical, made in many weights, widths, patterns and colors. Write for samples and prices.

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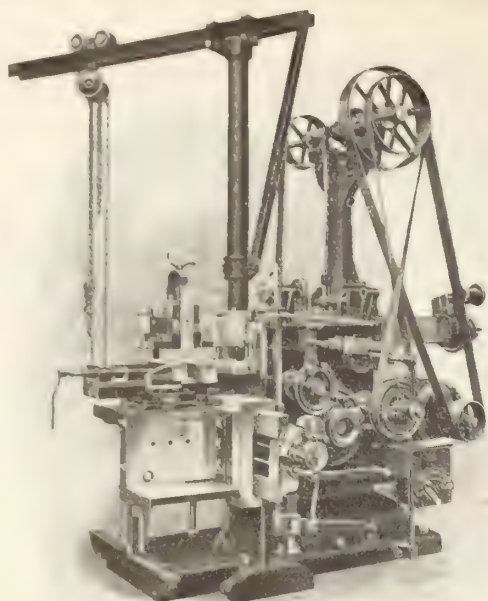
Du Pont Building, Wilmington, Del.

Railroad Dept. Representatives:

**WENDELL & MacDUFFIE COMPANY**

63 BROADWAY, NEW YORK

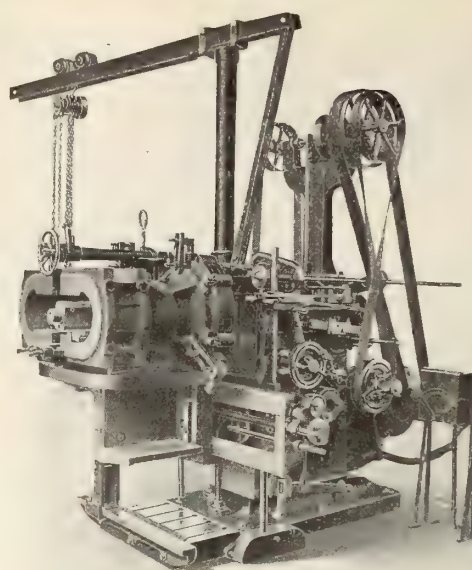




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THE MOST POWERFUL SHAPER OF ITS SIZE BUILT,—ENOUGH SO TO BREAK  $1\frac{1}{4}$  x 2-INCH TOOL STEEL.

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SPECIAL RAILROAD SHAPER, SLOTTING CONTINUOUS AXLE BOXES 22 INCHES THROUGH DIAMETER OF CROWN BRASS  $12\frac{1}{2}$  INCHES.

THIS MACHINE PLANES THE BRASS WITH THE LINES OF CUT PARALLEL TO THOSE IN THE BOX, MAKING A PERFECT BEARING, AND ELIMINATING TROUBLE WITH LOOSE BRASSES.

**THE MORTON MANUFACTURING CO., Muskegon Heights, Mich., U.S.A.**

Send for Bulletin No. 6 G., which fully illustrates.

## HUNT-SPILLER IRON

HAS THE

STRENGTH AND WEARING QUALITIES

that are absolutely necessary in

## LOCOMOTIVES CASINGS

ELIMINATES ENGINE HOUSE REPAIRS

*Made Only by*

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Office and Works,  
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Enameled iron signs for station names and doors are ideal. They always command attention and look bright and attractive. They never fade and will last a life time.

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Write for Prices.**

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of all descriptions to stock  
or special design, apply to  
The Canadian Office and School Furniture  
Co., Limited  
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THE WORLD-WIDE WIRELESS.

We supply installations on Land, Ship, Railway and Aeroplane. Sets range from 50 to 2,000 miles.

### DEMONSTRATED

That Merchant and Pleasure Craft cannot afford to be without a **MARCONI EQUIPMENT**. Every passenger steamer worth the name is now equipped with Marconi Wireless. Over 1,800 vessels now equipped.

**Canadian Marconi Company**

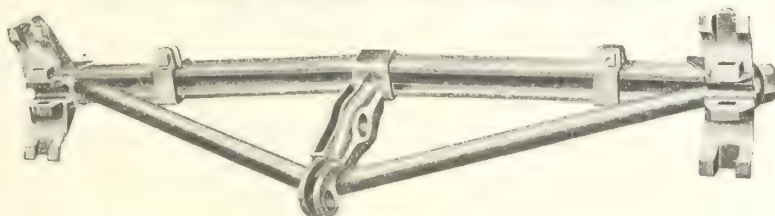
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## Buffalo Brake Beam Company

BUFFALO BEAMS ARE BEST BEAMS

### OFFICES:

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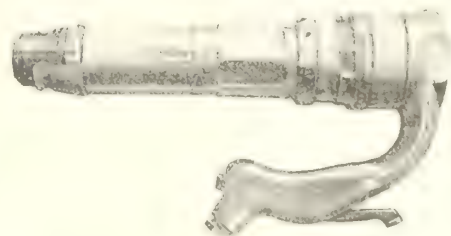
*Canadian Works: HAMILTON, ONT.*

**Brake Beams for all Classes of Cars, Locomotives and Electric Equipment**

## New Boyer Rivetting Hammers

Are made suitable for all classes of work. Are furnished with:

Closed or open handle. Inside or outside trigger.  
Inverted handle, permitting operation in close quarter (see cut).  
M.S. tool holder—prevents piston or rivet set from shooting out, also can be used to hold a chisel (see cut).



Thousands in use in every part of Canada.  
All giving excellent satisfaction.

Catalogues showing latest appliances  
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**"P. & W. Co." INSURES QUALITY**

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*Pratt & Whitney Co. of Canada, Limited*

DUNDAS, ONTARIO

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These Steel Back Brake Shoes weighed approximately twenty pounds each when put in service. When ready for the scrap heap, after long and satisfactory use, they weighed about six pounds each.

Just compare this record with that of ordinary unreinforced brake shoes. Almost invariably they go to pieces before being half worn out, and their average scrap weight is about fifteen pounds.

No argument for ordinary shoes can meet the demonstrated facts that stand behind Steel Back Brake Shoes.

Manufactured in Canada.

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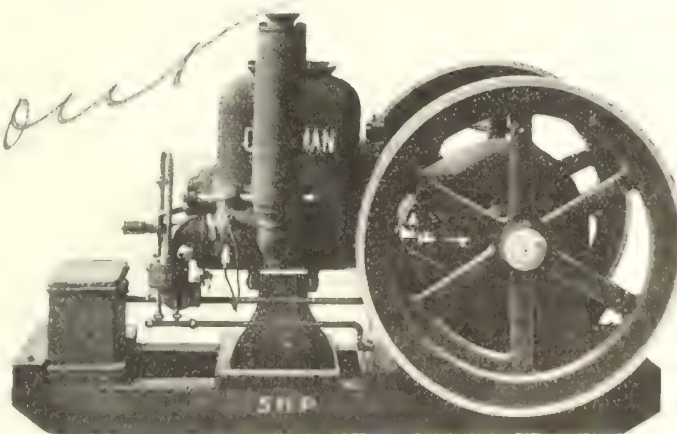
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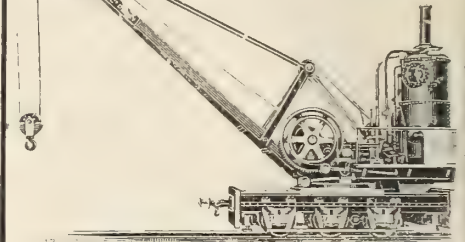
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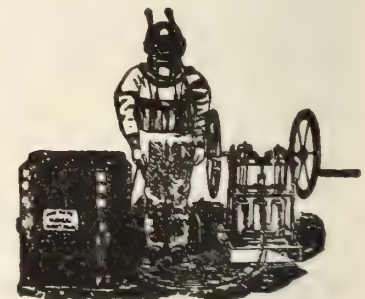
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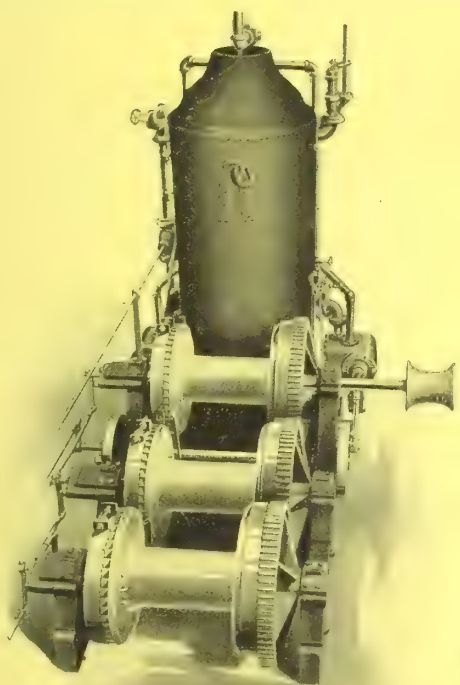
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ESTABLISHED 1898.

Number 207

TORONTO, CANADA, MAY, 1915

Subscription Rates, Page 179



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Let us hear from you when your requirements call for standard or special equipment for Hoisting, Excavating, Dredging and Material Handling.

Send for General Catalogue No. 21.

## M. BEATTY & SONS, Limited

WELLAND

CANADA

Established 1862

## The Low Cost of *Beatty-Made* Equipment

Don't make the mistake this season of permitting initial cost to control your selection of machinery.

Results prove that equipment of Beatty-Make is cheaper in the end.

### The Reason!

You are assured of Constant Service.

### Immediate Shipment

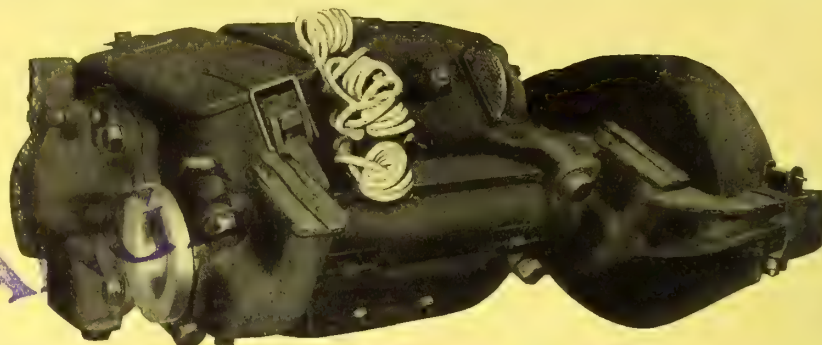


"FAIVRETTE" TYPE "D" Dredging Clamshell. For excavating and heavy handling duty.

We also make the "FAIVRETTE" in a lighter weight type for handling such materials as sand, gravel, crushed stone, coal, etc.



An exceptionally cool  
running railway motor;  
very economical in main-  
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consumption—



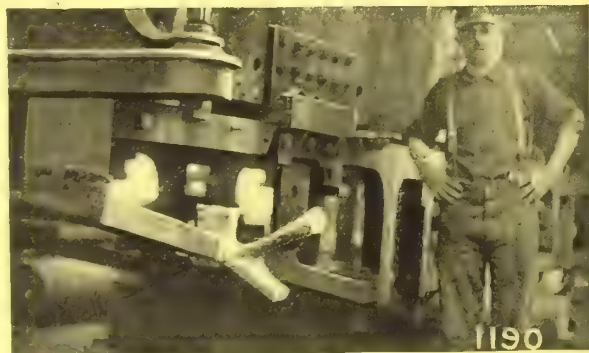
## Westinghouse No. 533 Commutating-Pole Railway Motor

Refinements in the manufacture of castings and the use of pressed-steel shapes made possible the production of a comparatively light-weight motor without any sacrifice in strength and durability. Weight, with gear case 2575 lbs. Capacity 45 h.p. at 500 volts, 54 h.p. at 600 volts. For minimum wheel diameter of 28 inches.

**Canadian Westinghouse Company, Limited, Hamilton, Ontario**

TORONTO MONTREAL OTTAWA HALIFAX FT. WILLIAM WINNIPEG CALGARY EDMONTON VANCOUVER  
Traders Bank Bldg. 52 Victoria Square Ahearn & Soper, Ltd. Telephone Bldg. Telfer Bldg. 158 Portage Ave. E. Grain Exchange Bldg. Dominion Bldg. Bank of Ottawa Bldg.

## Difficult Frame Welding Made Easy with Thermit



Finished Thermit Weld on Engine No. 802 of the  
Grand Trunk Pacific, Transcona, Man.



Frame Welded with Thermit by the Illinois Central,  
Centralia, Ill.

You can weld a frame quickly and economically with Thermit, whether it is broken in the splice, under the fire box, close up to the cylinder, or at any other point. It is not necessary to take the frame down, as all welds can be made with the frame in place.

No other process of welding is so quick and uniformly efficient and economical in operation as the Thermit Process.

The proof is in the fact that to-day 435 railroad shops in North America are using Thermit and returning their engines to service in from 10 to 24 hours.

We have just issued a new pamphlet of instructions for the use of Thermit in railroad shops, known as Pamphlet No. 2144. This should be in the hands of every railroad man, as it tells how and why the Thermit Process of welding will save thousands of dollars every year in repair costs. Write for it to-day.

## GOLDSCHMIDT THERMIT COMPANY

103 Richmond St. W., Toronto, Ont.  
90 West Street, New York

WILLIAM C. CUNTZ, Gen. Mgr.

329-333 Folsom Street, San Francisco  
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# Galena-Signal Oil Company

Works

**Franklin, Pa., and Toronto, Ont.**

Canadian Sales Office—603 Shaughnessy Bldg., Montreal, Que.

Sole manufacturers of the celebrated GALENA COACH, ENGINE and CAR OILS, and SIBLEY'S PERFECTION VALVE and SIGNAL OILS.

GUARANTEE COST per thousand miles for from one to five years, when conditions warrant it.

Maintain EXPERT DEPARTMENT, which is an organization of skilled railway mechanics of wide and varied experience. Services of Experts furnished free of charge to patrons interested in the economical use of oils.

## STREET RAILWAY LUBRICATION A SPECIALTY

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USE

## Galena Railway Safety Oil

in Headlights, Marker and Classification Lamps, to secure Efficiency of Service, Maximum Candle Power, Clearness of Light.

## Galena Long Time Burner Oil

for use in Switch and Semaphore Lamps, and all lamps for long time burning, to avoid smoked and cracked chimneys and crusted wicks.

Tests and Correspondence Solicited.

**S. A. MEGEATH,**  
PRESIDENT.



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## HAMILTON, CANADA

### Special Steel Marine Forgings

When forgings are required to stand the strain of rough weather, and to prove themselves reliable and dependable, write us for particulars and prices.

We have the facilities for the production of heavy steel forgings of all kinds, including:

Connecting Rods

Crank Shafts

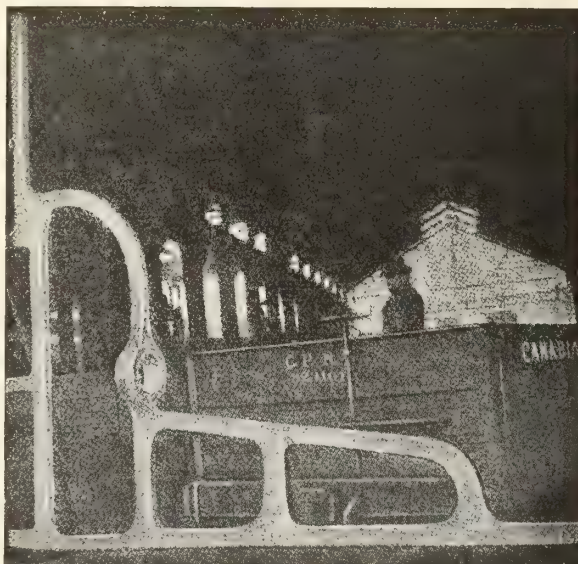
Eccentric or  
Cam Forgings

Marine Engine  
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Piston Heads

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**Stern Frame of Steamship Hamonic**

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Steam Engine  
Forgings

#### *District Sales Offices:*

**HAMILTON**

**MONTREAL**

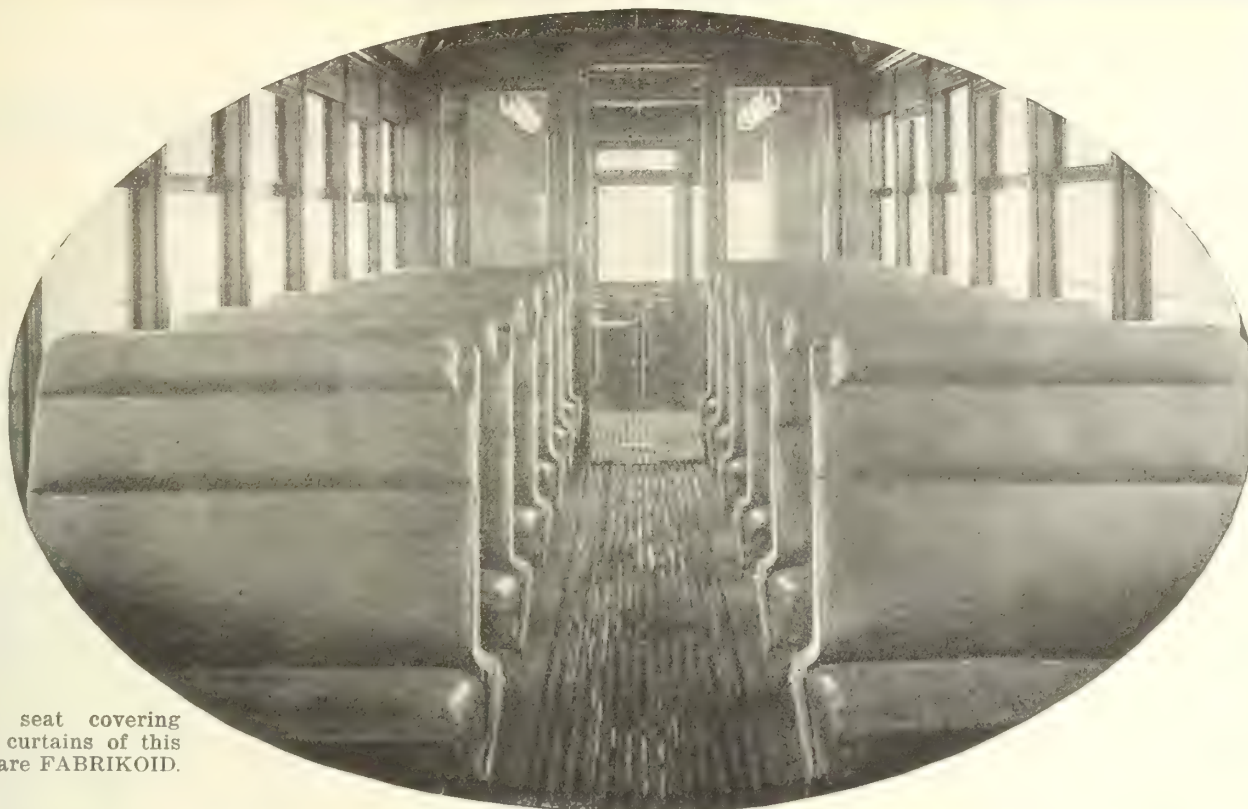
**TORONTO**

**WINNIPEG**

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H. G. Rogers, St. John, N.B.  
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The seat covering and curtains of this car are FABRIKOID.

## Cut Your Car Seating Maintenance Costs

You know what car seating maintenance costs! Besides, you surely know the initial cost of leather upholstery. Investigate.



REG. U. S. PAT. OFF.

Note its handsome appearance—soft, pliable and attractive; any shade and any grain you want. Bear these facts in mind:

Fabrikoid Is Sanitary. Comfortable. Attractive.

Fabrikoid Does Not Split or Crack.

Fabrikoid Is Impervious to Water.

Fabrikoid Can Be Cleaned with Soap and Water.

Fabrikoid Is Made in Many Weights, Widths, Patterns and Colors.

Some of the leading railroads are using FABRIKOID for car seating and locomotive cab seats. Convince yourself and write for samples.

As one prominent railway man said: "The designs and patterns of Fabrikoid surprise me."

# DuPont Fabrikoid Company

WILMINGTON, DELAWARE

Factories at Newburgh, N. Y. and Toronto, Canada

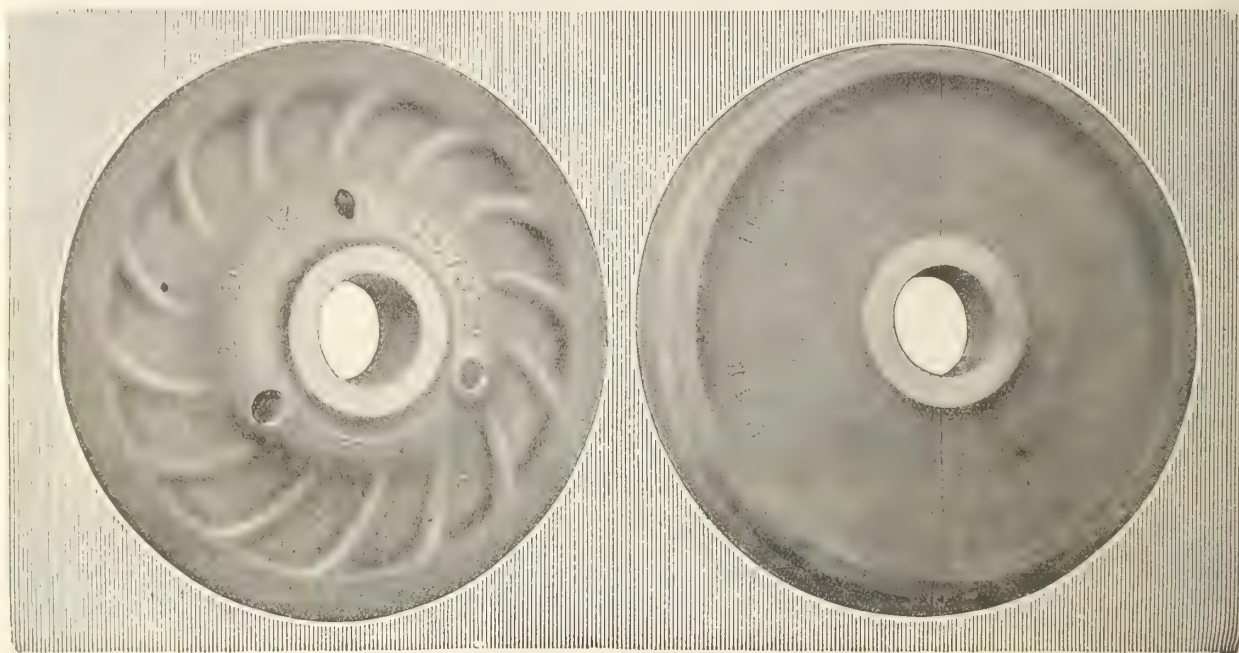
WENDELL & MacDUFFIE CO.

R. R. Department Representatives

60 Broadway, New York, N. Y.



# The Wonderful Single Service Chilled Iron Car Wheel



**M.C.B. STANDARD 725-LB. CHILLED IRON WHEEL FOR 100,000-LB. CAPACITY CARS.**

Single service means a wheel applied and allowed to run its life without any repairs whatever, such as turning.

Contrasted with multiple wear wheels, this means that no heavy investment in lathes is necessary and the maintenance expense is assured, because all Chilled Iron Wheels carry a minimum guaranteed mileage or time service.

It is a recognized fact that no other type of wheel can carry as heavy a burden as the Chilled Iron Wheel and maintain its rotundity, and the reason is that Chilled Iron will not crush or flow under heavy loads.

**THE WONDERFUL SINGLE SERVICE CHILLED IRON CAR WHEEL.**

Twenty-five Million now running.

**Association of Manufacturers of Chilled Car Wheels**  
**1214 McCormick Building, Chicago**

Representing forty-eight wheel foundries located throughout the United States and Canada. Capacity 20,000 chilled iron car wheels per day.

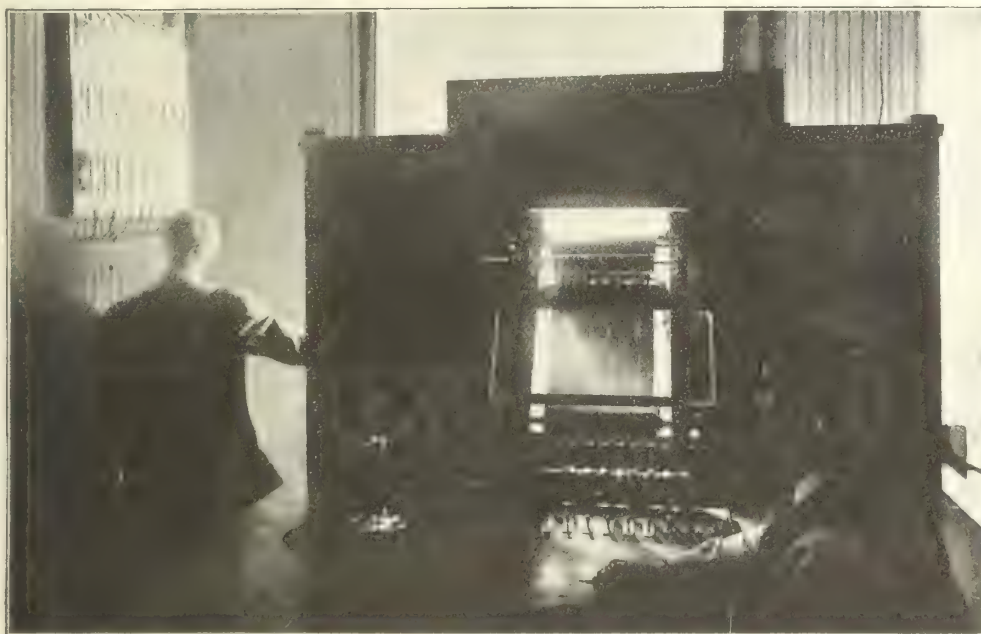


# Meeting One Financial Obstacle to Adequate Signal Protection

There is little doubt that there would be a tremendously greater amount of mileage protected by automatic block if first cost were the only difficulty to be encountered. The great difficulty, however, in the universal use of fixed automatic block signals is found in the continuous cost of maintenance.

The advantage in this respect of

## Simmen Automatic Block Cab Signals



is shown by the fact that none of the four roads which are operating the Simmen System have found it necessary to provide any special organization or additional labor for inspection purposes.

The reason for this is that the track and overhead installation of the Simmen System is so simple (involving no apparatus along the track except standard telephone overhead construction and simple signal rails) that the regular track and line maintenance labor is ample to care for these elements.

All operating electrical apparatus is either in the cab or in the dispatcher's office.

The cab apparatus is easily inspected when the car is in for regular inspection.

The apparatus in the dispatcher's office is readily inspected and cared for by the dispatcher, with the occasional assistance of a lineman.

This enormous comparative saving in maintenance costs is proved by the experience of the four roads on which the **Simmen System** is now, and has for some time been, standardized.

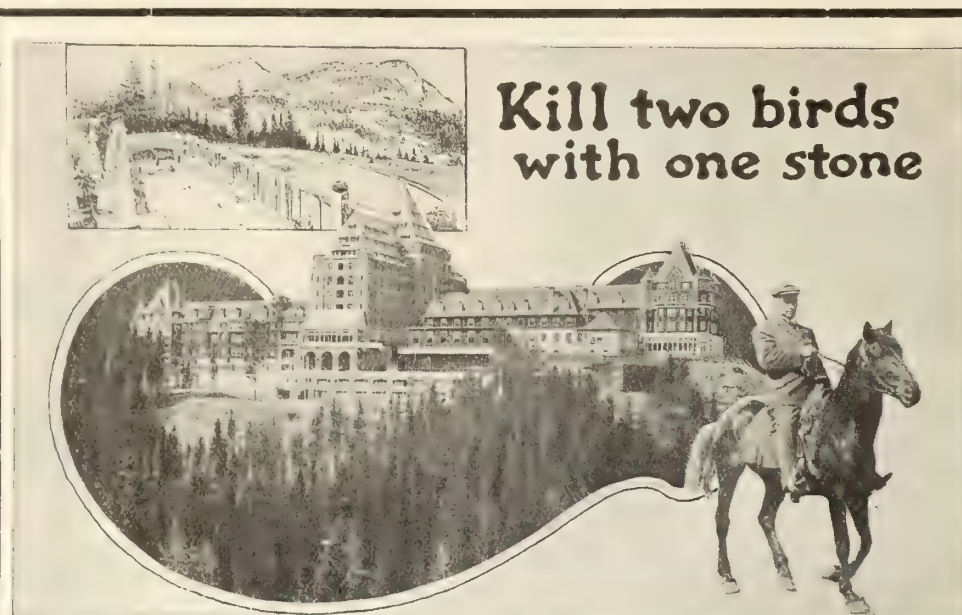
The importance of this fact in any signal installation is obvious.

## THE NORTHEY-SIMMEN SIGNAL CO., Ltd.

### TORONTO

Simmen Automatic Railway Signal Co., Buffalo





and travel via THE  
**CANADIAN ROCKIES**  
to the  
**PANAMA PACIFIC EXPOSITION**

If you are planning your 1915 trip to San Francisco, make sure your ticket reads via Canadian Pacific, otherwise you will miss the grandeur beauty of nature's most stupendous works—The Canadian Rockies.

**BANFF      LAKE LOUISE      FIELD      GLACIER**

Are important tourist stop-over points on the Canadian Pacific Railway route to the Pacific Coast. These have excellent hotel accommodation, with opportunities for riding, climbing, swimming, boating and golf.

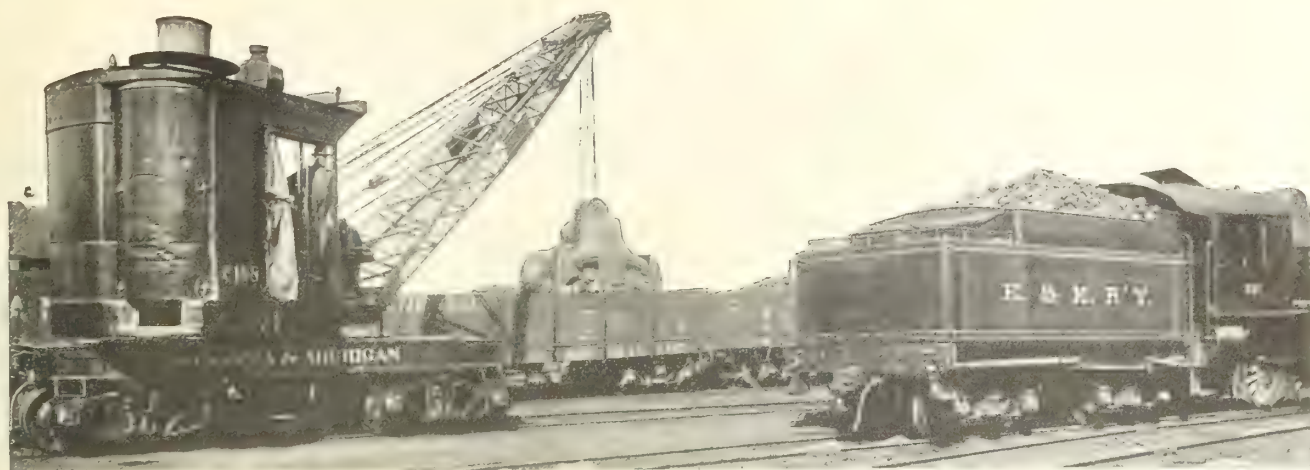
Agents will personally call on you to arrange your itinerary.

Write, phone or call on nearest C. P. R. Representative.

**W. FULTON**  
Asst. Dist. Passenger Agent  
Toronto

**M. G. MURPHY**  
Dist. Pass'r. Agent  
Toronto





When you are depending upon a locomotive crane for handling your coal you realize that it must be a **good** crane. You cannot have the crane continually breaking down, as it means a big loss in time.

## BROWNHOIST Locomotive Cranes

are being used to-day by railroad men because they realize that these cranes will do their work as it should be done. One road uses thirty of them. These cranes are built for hard, continuous service. And records prove that they will stand up under the severe working conditions. Ask the owners—they will tell you what Brownhoist cranes will do.

Write for our Catalog K, which shows how and where the Brownhoist Locomotive Crane is used.

***THE BROWN HOISTING MACHINERY CO.***  
***CLEVELAND, OHIO***

MONTREAL OFFICE, 145 St. James Street





## Don't Pump Your Jack Down

*Lower the Load by "Pressing the Button"*

## THE NORTON SELF LOWERING JACK

is absolutely Safe and will do your  
work **Quicker** and **Easier** than you  
have ever done it before.

Send for Illustrated Catalogue No. 28

**A. O. NORTON, Limited**  
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# GENERAL SERVICE CARS

## OTIS DUMP CARS

— PATENTED —

— PAMPHLET No. 16 TELLS ABOUT THEM —

Always Ready For  
Use

One Man Operation

Simplest, Safest and  
Best Door Operating  
Gear

Largest Unobstructed  
Door Opening

Dumps Clear of the  
Rail



THE STANDARD COAL CAR ON CANADA'S LEADING RAILROADS.

Built in Any Size  
or Capacity

All Steel, Wood or  
Composite

For Standard or  
Special Service

Thousands in Use

THE MOST PRACTICAL CAR FOR ALL BULK FREIGHT.  
A DUMPING GONDOLA FOR ALL SERVICES.

DESIGNED AND BUILT BY

**THE HART-OTIS CAR CO., LIMITED : MONTREAL**

—SOLE PATENTEES FOR GENERAL SERVICE CARS FOR CANADA—





# Copper, Plus

Copper + constant study of bonding problems and manufacturing methods + care in manufacture + rigid inspection + proper packing + the pride of a complete factory organization = O-B Rail Bonds.

All those things that we put into O-B Bonds result in actual service to the users.

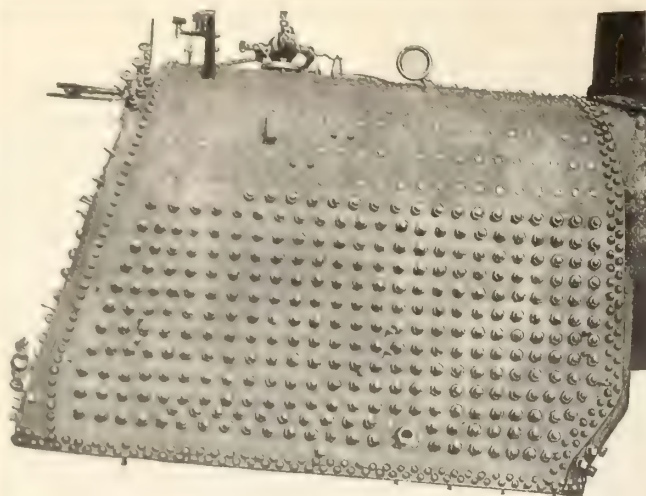
*There is an O-B Bond for every condition.*

## The Ohio Brass Co.

Mansfield, Ohio







## The Perfect Stay

*For Locomotive Fire Boxes*

## Tate Flexible Staybolts

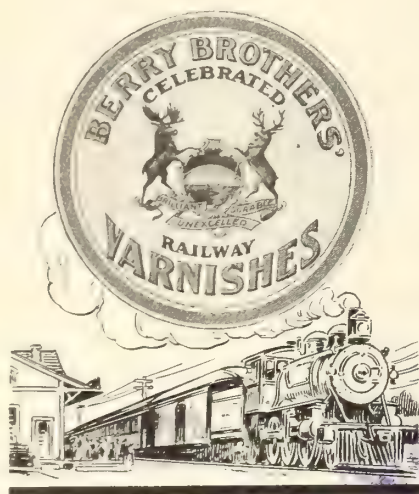
Are now in use on 425 Railroads of the United States as well as the main Railroad Systems of Canada.

RECOGNIZED AS THE MOST ECONOMIC FLEXIBLE STAYBOLT now in the market, because the Tate Bolt has demonstrated its true functions as a mechanical appliance to service fire box requirements.

MANY RAILROAD SYSTEMS have kept accurate service records and show remarkable increase in the earning power of the locomotives that have been equipped with complete installations of the Tate Flexible Staybolt.

**FLANNERY BOLT COMPANY, Vanadium Building, Pittsburgh, Pa.**

Manufactured and sold in Canada by Canadian Allis-Chalmers, Limited, General Offices, Toronto, Ont.



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*(A combination of Efficiency and Economy)*

The use of Berry Brothers' Railway Varnishes is not only a measure of efficiency, but one of economy also.

Our Finishing and Rubbing Varnishes for coaches and locomotives are the perfected results of fifty-seven years' experience in varnish making.

They make the highest finishing possibilities sure and easy.

**Here are a few Berry Brothers' products you should know**

Outside Coach Finishing  
Outside Coach Rubbing

Inside Coach Finishing  
Inside Coach Rubbing

Locomotive Finishing  
Locomotive Rubbing

*Let us send you a catalogue of our railway varnishes*

**BERRY BROTHERS**  
(INCORPORATED)  
**World's Largest Varnish Makers**

WALKERVILLE

ONTARIO



# The Science of Water Treatment

The Dearborn Company was organized because of the conviction on part of its founders that a scientific handling of the water treatment question was the only solution for the steam user of the troubles constantly arising as a result of scale formation, foaming, corrosion and pitting of boiler tubes, with all the attendant injury to the boilers, loss of heating efficiency, and waste of fuel.

Periodical removal of scale is unsatisfactory since there is a constantly increasing ratio of heat loss and fuel waste—as the scale gradually forms—aside from the injury to the boilers.

The Practical Method is **Prevention** and this can be effectively done only by attacking the mineral ingredients in the water with the proper reagents, changing their nature and character and eliminating their harmful qualities.

The application of scientific knowledge is most important in the choosing of reagents. Provision must be made for the various minerals present in the water, determined by analysis, as well as for the by-products that will be formed as a result of reactions brought about. Failure to give this phase due consideration may result in more serious trouble than the first condition of the water produced.

Unscientific "dope" compounds, ineffective and often harmful, have caused steam users endless annoyance and trouble.

We'd like an opportunity to demonstrate results by our methods. Gallon samples of the water supplies for analysis constitute the first step. May we have them?

## Dearborn Chemical Company of Canada, Limited

Office and Works,  
1220-1230 Dundas Street, TORONTO, ONT.



### GRAND TRUNK HOTELS

#### The Chateau Laurier, Ottawa, Ont.

Accommodation, 350 rooms. Rates \$2.00 per day and upwards, European Plan.

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Accommodation, 300 rooms. Rates \$2.00 per day and upwards. European Plan.

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G. T. BELL,  
Passenger Traffic Manager,  
Montreal, Que.

### EXCELLENCE COUNTS!

## Excellence in Railway Service

is expressed in what the

### Grand Trunk System The Double Track Route

is offering the Travelling Public of Canada.

Unexcelled Road Bed  
Superior Dining Car Service  
Courteous Attention  
Modern Equipment

The Grand Trunk System reaches all trade centres in Eastern Canada, and is now a large factor in Western Canada traffic through the Grand Trunk Pacific Railway, recently completed to the Pacific coast.

W. P. HINTON,  
Assistant Passenger Traffic Manager,  
Montreal, Que.



MODERN HIGH-CLASS  
**ROLLING STOCK**



Passenger, Freight  
 and  
 Electric Railway,  
 Car Castings,  
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 Parts.

**CROSSEN CAR COMPANY, LTD.**

COBOURG - ONTARIO

**"Made in Canada" for a Canadian Road**



Type of Caboose Car built for Pacific Great Eastern Railway

There is a "NATIONAL" Car for your requirements regardless of what they may be.  
 If your rolling stock bears a "NATIONAL" Trade Mark it is a sufficient guarantee that  
 only first-class labor and materials have entered its construction.

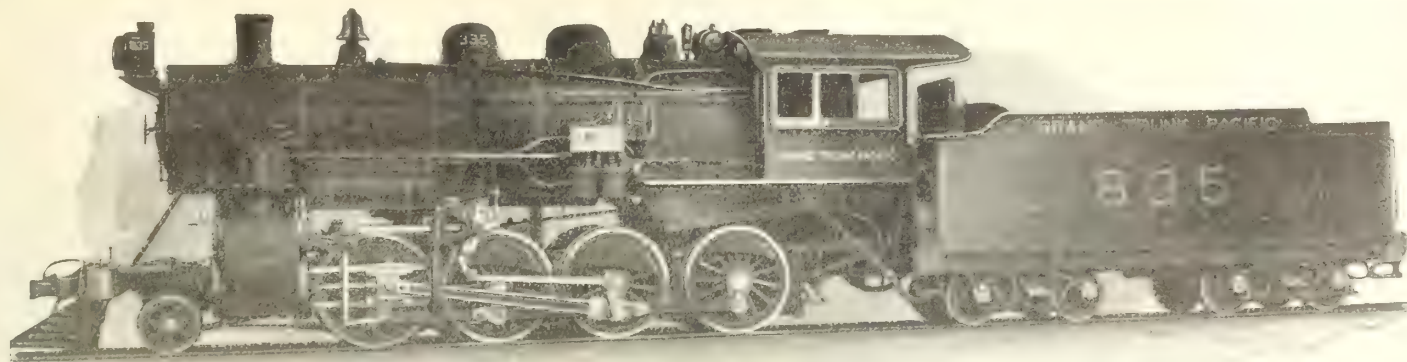
**National Steel Car Company, Limited**

Montreal Office  
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Western Union Code  
 ADDRESS INQUIRIES TO HAMILTON

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Consolidated Type Locomotive Built for Freight Service on the Grand Trunk Pacific Railway.

# LOCOMOTIVES

Long experience, new equipment, efficient management and expert workmen, are guarantees that our Locomotives will give record service. Over 1,200 Locomotives have been built at our Works since the erection of the plant. We are builders of Simple and Compound Locomotives adapted to every variety of service, for Railway Contractors, for Industrial Purposes, Mines, all classes of Railway Work, etc.

We are also builders of stationary boilers, suitable for contractors and industrial plants. Grey iron castings—any size or shape—ordinary or intricate—made promptly. New foundry, splendidly equipped. We would be pleased to quote on castings—singly or by contract. We also make drop forgings of all descriptions.

**CANADIAN LOCOMOTIVE CO., Limited, Kingston, Ontario**

# ANNOUNCEMENT

TO THE CANADIAN STREET RAILWAY COMPANIES

Wish to advise, we have opened a Canadian Plant for the manufacture of the

**KNUTSON Trolley Retriever**  
**IDEAL Catcher**  
**Pressed Steel Headlight**  
**SIMPLEX Trolley Base**

and other specialties and by February 25th, will be in a position to make shipment of our products from our Canadian Plant. Feel certain that this move will be appreciated by the Canadian Street Railway Companies and await the continuance of the valued patronage given us by the numerous lines in Canada.

**THE TROLLEY SUPPLY CO., Canton, Ohio**



# Nova Scotia Steel and Coal Co., Limited

*Manufacturers of*

MARINE, RAILWAY AND GENERAL ENGINEERING FORGINGS OF ALL SHAPES AND UP TO 40 TONS IN WEIGHT, MADE FROM BEST ORDINARY OR HARMET FLUID COMPRESSED OPEN-HEARTH STEEL. OUR FORGE IS EQUIPPED WITH THE MOST MODERN STEAM HYDRAULIC PRESSES.

RAILWAY TRACK MATERIAL, fish plate, tie plate, track bolts, spikes, tee rails—12 to 40 lbs. per yard.

ROLLED STEEL FOR CAR BUILDERS' USE: Spring, machinery, tire, angle, and merchant bar steel, bright compressed shafting, rivets, tank plate—12-gauge up to 1" and 50" wide cold twisted steel bars for reinforced concrete work.

ALSO MINERS AND SHIPPERS OF THE CELEBRATED "OLD SYDNEY" COAL.  
HIGH CALIFORIC VALUE—LOW ASH—UNEXCELLED FOR STEAM-RAISING PURPOSES.  
BEST HOUSE COAL MINED IN CANADA.

Collieries, Iron and Steel  
Furnaces:  
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Piers:  
NORTH SYDNEY, C.B.

Finishing Mills, Forge, and  
Engineering Shops:  
NEW GLASGOW, N.S.

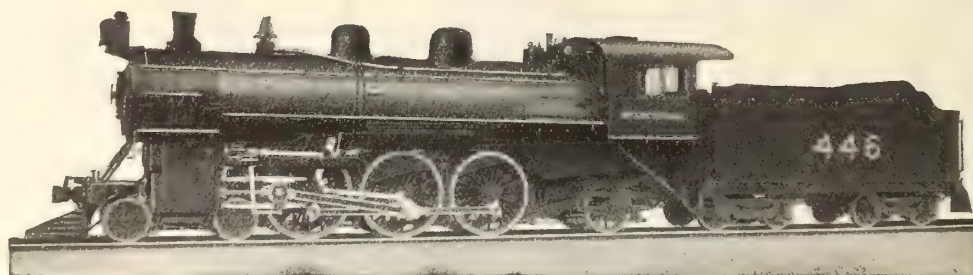
ENQUIRIES SOLICITED

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Head Office:  
**NEW GLASGOW, N.S.**

## Heavier Trains—Less Coal and Water Per Trip



PACIFIC TYPE LOCOMOTIVE — INTERCOLONIAL RAILWAY.

Total weight of engine, 243,500 pounds; weight on drivers, 154,000 pounds; diameter of drivers, 73 inches; boiler pressure, 180 pounds; cylinders, 23½ x 28 inches; maximum tractive power, 32,400 pounds.

On a 185 mile run at an average speed of 40 miles per hour, these new Pacific type locomotives handle 10 cars and consume 12,884 pounds of coal and 9,750 gallons of water per trip.

Pacific type locomotives built five years ago, handled 9 cars on this same run at the same speed, but consumed 17,620 pounds of coal and 14,250 gallons of water per trip.

This is a saving of 26.9 per cent. in coal and 31.6 per cent. in water, with one extra car.

**MONTREAL LOCOMOTIVE WORKS, LIMITED,**  
DOMINION EXPRESS BUILDING, MONTREAL, CANADA



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SERVICE BETWEEN

## Toronto Union Station & Ottawa Central Station

In the heart of the Business District

Nearest to Principal Hotels and Places of Business

### ONE NIGHT FOR THE ROUND TRIP WITH A HALF DAY IN OTTAWA

Convenient Service to Port Hope, Cobourg, Colborne, Brighton, Trenton, Belleville, Napanee and Smith's Falls.

#### NIGHT TRAIN

	P.M.		A.M.
Leave TORONTO	11.00.....	Arrive OTTAWA	7.40
	P.M.		A.M.
Leave OTTAWA	11.00.....	Arrive TORONTO	7.30
	(Daily)		

#### DAY TRAIN

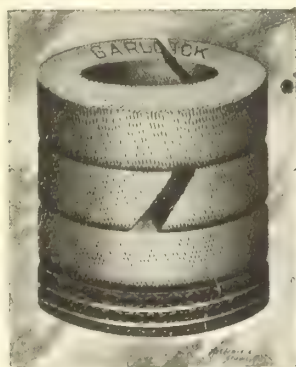
	A.M.		P.M.
Leave TORONTO	10.20.....	Arrive OTTAWA	7.05
	NOON		P.M.
Leave OTTAWA	12.15.....	Arrive TORONTO	9.15
	(Daily Except Sunday)		



Day trains leave at hours particularly attractive to ladies, also to business men who can attend to their morning mail before leaving Toronto.



## FOR PACKING



Style No. 3200

### THE GARLOCK PACKING CO.

HAMILTON ONTARIO

CALGARY  
TORONTO

BRANCHES:



MONTREAL  
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Locomotive Throttles  
Use Garlock Style Number 3200.

Air Pump Piston Rods  
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Use Garlock Style Number 150.

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Use Garlock Style Number 200.

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Use Garlock Style Number 99.

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Use Garlock Style Number 260.

Outside Packed Plungers  
High Pressure Cold Water  
Use Garlock Style Number 960.

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High Pressure Hot Water  
Use Garlock Style Number 1907.

These Packings are Guaranteed to give Satisfactory Service under the above conditions.



# PEDLAR'S "PERFECT" PRODUCTS

## MADE IN CANADA

### Permanent Construction on Right of Way

THE most effective and permanent construction on railway right of way obtained by installing

#### Pedlar's "PERFECT" Rivetted Culverts



They are thoroughly tested, and stand up under all kinds of climatic conditions.  
Made of extra heavy gauge "Toncan" Metal, in all sizes up to 84" diameter, with special deep and narrow corrugations, which will support heavy or continuous loads with a minimum of soil packing. The rivets also are heavily galvanized.

These culverts are rapidly laid, they reduce maintenance cost, and have the advantage over concrete of being frost-proof and plastic.

Pedlar's "Perfect" Perforated Drains, made from anti-corrosive "Toncan" Metal, eliminate all trouble at rail joints.

Large stocks always on hand for prompt shipment. Also made to order for special uses and specifications.

Write for Culvert Folder "R. M." and full information.  
Made in Canada.

### The PEDLAR PEOPLE, Limited

Established 1861.  
Executive Office and Factories: Oshawa, Ont.  
Branches:  
Montreal—Ottawa—Toronto—London—Winnipeg.  
Address nearest Branch.



# MARTIN-SENOUR PAINTS AND VARNISHES

MADE IN CANADA

Marine Paint  
Deck Paint  
Hull Paint  
Copper Paint  
Seam Paint  
Mast Paint  
Dory Paint  
Signal Paint  
Smoke Stack Paint  
Bunker Paint

The Martin-Senour line of Marine Paints and Varnishes is the most complete line manufactured in Canada.

There is a Martin-Senour finish for every purpose from stem to gudgeon. Each product guaranteed to best serve the purpose for which it is made.

Yacht Enamel  
Engine Enamel  
Canoe Enamel  
Deck Furniture Enamel  
Canvas Preservative  
Railing Black  
Ships Black  
Durable Boat Spar Varnish  
Boat Spar  
Cabin Finish

Write for our Marine Catalogue and Color Chart  
IT'S FULL OF INTEREST TO THE MARINE TRADE



*The* **MARTIN-SENOUR** *Go.*  
LIMITED  
PRODUCERS OF PAINTS AND VARNISHES  
CHICAGO    MONTREAL    WINNIPEG  
HALIFAX    • LINCOLN •    TORONTO





# The Sign of the Times



Enamelled iron signs are ideal for station name and station door signs.

They are much superior to a painted wooden sign, which has to be repainted at frequent intervals, and they last a lifetime.

There is absolutely no wear to them, and we guarantee that they will not fade or be affected by the weather in any way.

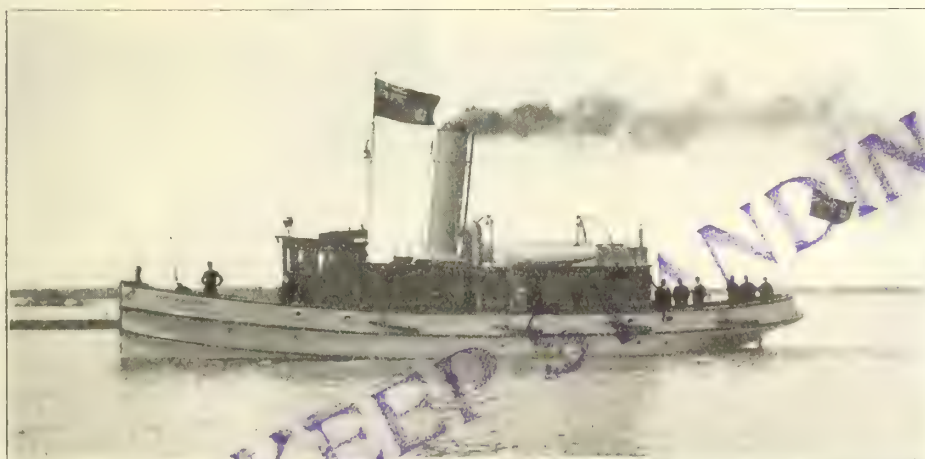
We will be pleased to quote you prices on request.

## Acton Burrows Limited

70 Bond Street, Toronto, Ont.

## STEEL SHIPBUILDERS

Engineers and Boilermakers



Steel Tug "Frederickton" built for the Dominion Government, 80 feet length, 20 feet breadth, 10 feet draught, compound marine engine, 12 x 26 x 18, Clyde boiler 10 feet x 11 feet, 145 lbs. steam.

Dredges, Hydraulic and Dipper Type; Steel Steamers, full Canal Size; Tugs, Barges and Scows

*Marine Engines and Boilers, all Sizes*

## Polson Iron Works, Limited

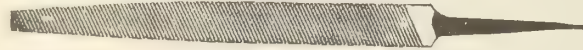
Works and Office, Esplanade East, Toronto



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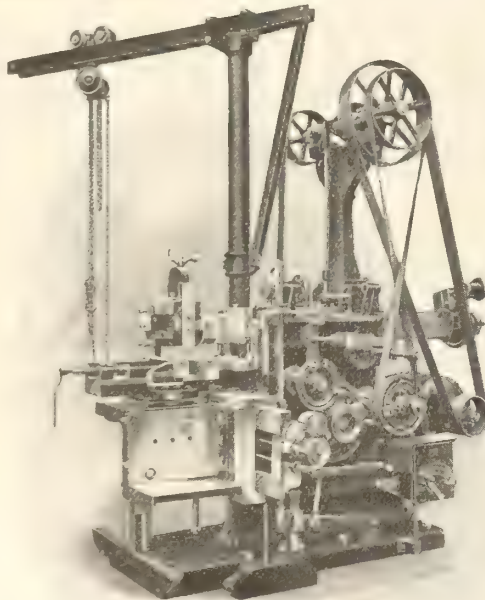
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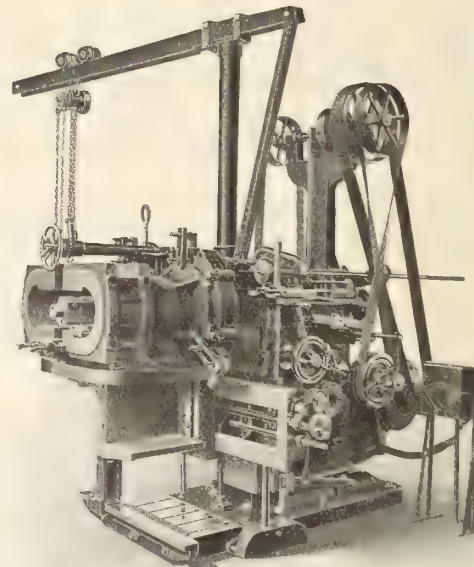
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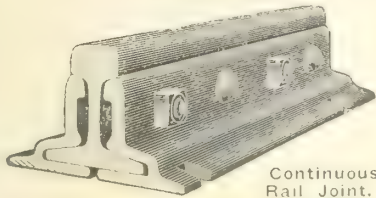
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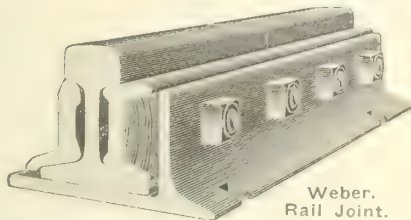
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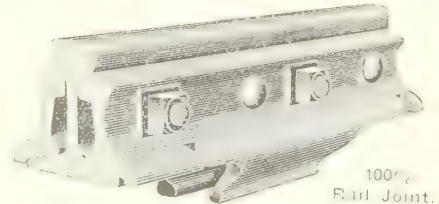
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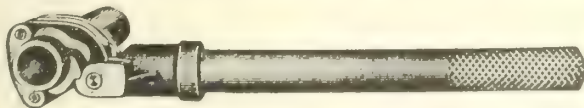
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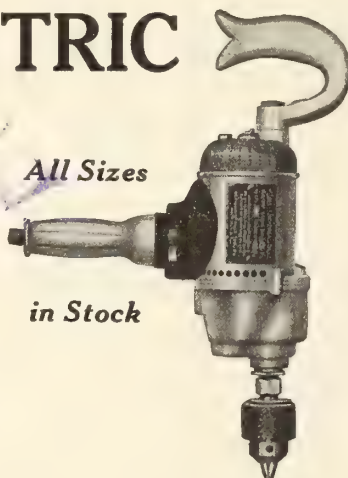
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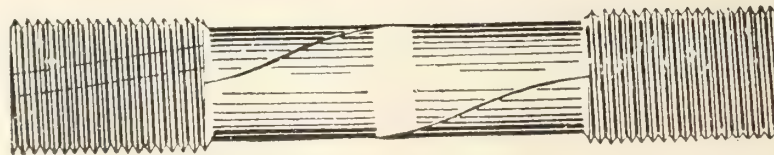
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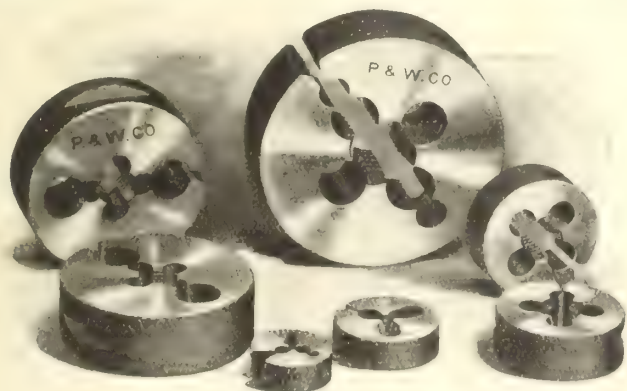
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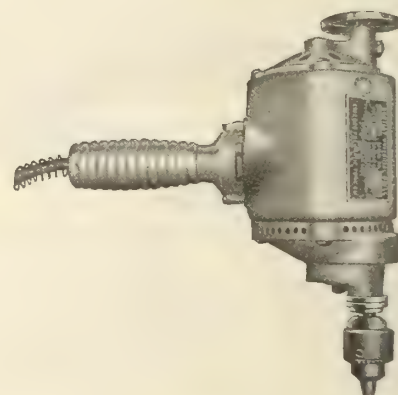
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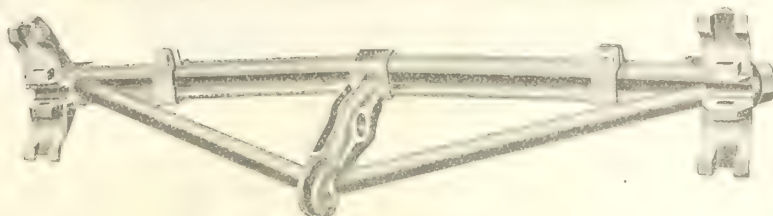


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# Canadian Railway and Marine World

May, 1915.

## Fuel Oil Installations on the Grand Trunk Pacific Railway.

The G.T.P. Ry. is planning to operate its newly opened line from Prince Rupert, B.C., as far east as Jasper, Alta., about 720 miles, with fuel oil, as soon as the necessary storage facilities are completed. The oil will be taken by vessel from Southern California to Prince Rupert, where large oil storage is being arranged by the oil company, as shown in the accompanying railway plan of Prince Rupert, fig. 1.

Adjoining the drydock property, there has been built an oil wharf, 80 x 150 ft., in line with section A of the drydock. On the other side of the oil wharf there are three tying piles at 75 ft. centres. Joining the wharf to the land, there is a 30 ft. wide pier, along one side of which, a timber ramp carries the five pipes shown in the lower right hand

each with a control valve, etc., as shown. Alongside the oil main, there is a 1½ in. steam pipe, with a ½ in. connection along each delivery pipe, with a valve at the end. The oil tank cars belonging to the railway company will be spotted under the delivery pipes, and when filled will be forwarded to supply fuel oil stations at Pacific, Smithers, Endako, Prince George, McBride and Jasper.

While oil has been used for locomotive fuel on other western roads for a number of years, it has not been under as extreme climatic conditions, the nearest approach being on the C.P.R., from 300 to 500 miles further south. The installations on the latter line were fully described in Canadian Railway and Marine World, Aug., 1912. Along the G.T.P.R., the temperature re-

construction, sheathed with corrugated galvanized iron, with an intervening layer of hair insulator. The smaller building is 20 ft. square and 35 ft. high, containing in the basement a receiving tank with a capacity for 8,400 imp. gals. (240 bbls.) On the ground floor level, there is a pair of 10 x 6 x 12 in. duplex pumps, with piping, etc., while elevated above on steel columns, there is a service tank, with a capacity for 21,000 imp. gals. (600 bbls.). The other building is of similar construction, but dodecagonal in form, 56 ft. across and 27 ft. high, containing a 52 ft. diam. storage tank, with a capacity for 350,000 gals. (10,000 bbls.). Both buildings rest on concrete foundations.

The unloading track as mentioned is be-

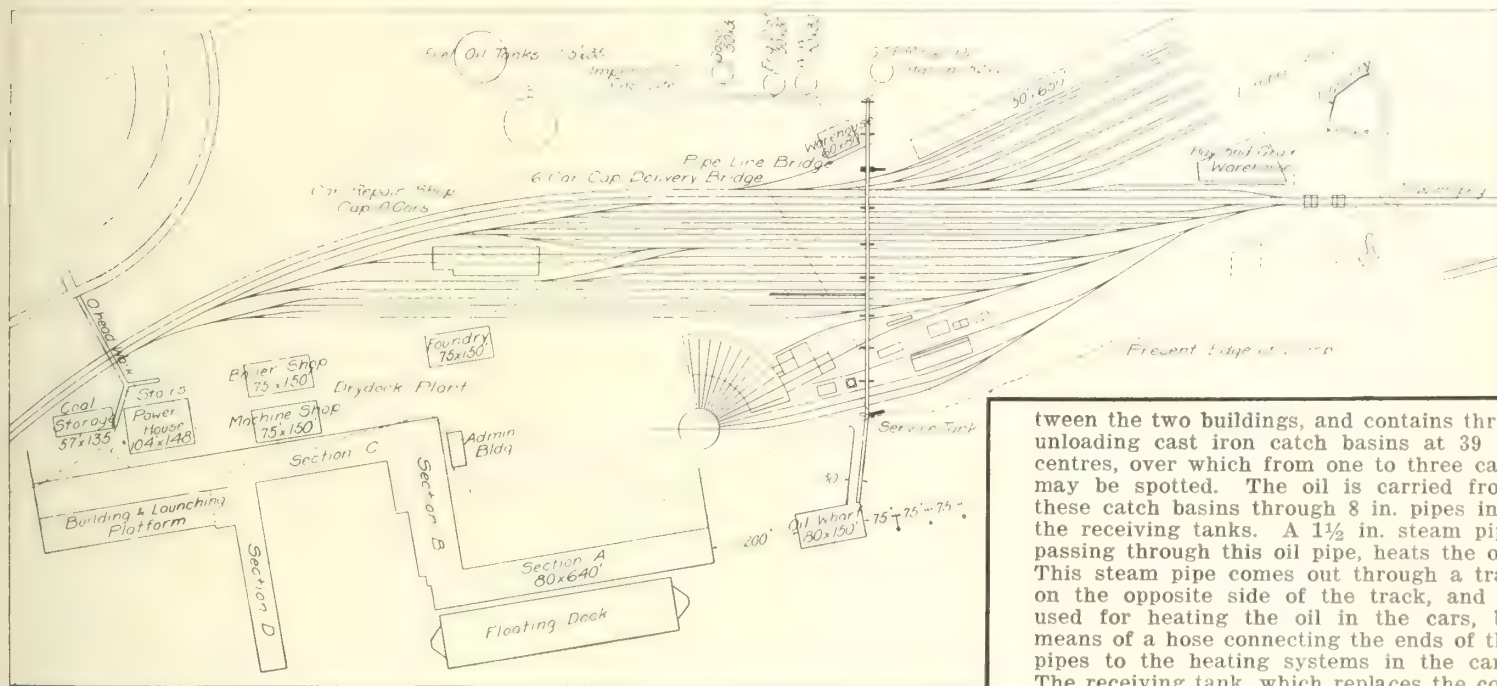


Fig. 1. Grand Trunk Pacific Railway Terminals at Prince Rupert, B. C., with Special Reference to the Oil Handling Facilities.

corner of fig. 2, to a bridge that crosses the tracks with a clearance of 22½ ft. above the rails. A cross section of this bridge is shown in the above view of the five pipes. It consists of six 74 ft., and three 83 ft. wooden through spans, 10 ft. deep between chords, and 5 ft. centre to centre of trusses. Between the trusses, there are carried three 8 in. pipes, with a 12 in. pipe on either side. Over top of the piping, there is a 3 in. flooring. Oil is taken over the bridge in these pipes to the several tanks located on the other side of the tracks.

For loading the tank cars for shipping the oil to the several divisional points, there is a delivery bridge, branching off from the pipe line bridge, with a capacity for 6 cars. This is shown in elevation in fig. 2. It consists of a timber bridge of 10 spans, 19½ ft. centres. From the left hand pipe, shown in the section of the oil bridge in the lower right hand corner of fig. 2, a 12 in. pipe leads off along the delivery bridge as shown, with 6 in. swing oil spouts at every 39 ft.,

mains around zero for weeks at a time, frequently dropping as low as 40 degs. below. California crude oil has the consistency of molasses, and cannot run or be pumped unless it is at a temperature of 60 degs. Fahr. This oil, to be delivered from the service tank to the locomotive, must be heated to at least 100 degs. Fahr., and not more than 110 degs. Fahr., as a higher temperature would cause the evaporation of the volatile constituents, thus reducing the efficiency of the oil as a fuel. From the foregoing, it is evident that the proper heating of the oil is a question of great economic importance.

Fig. 3 shows the fuel oil station design that has been developed to meet these conditions. Each fuel station is located at 400 ft. from the centre of the locomotive house, near the boiler room, from which the necessary supply of steam for heating is obtained. The station consists of two buildings on either side of an unloading tank. Both these buildings are of frame

tween the two buildings, and contains three unloading cast iron catch basins at 39 ft. centres, over which from one to three cars may be spotted. The oil is carried from these catch basins through 8 in. pipes into the receiving tanks. A 1½ in. steam pipe passing through this oil pipe, heats the oil. This steam pipe comes out through a trap on the opposite side of the track, and is used for heating the oil in the cars, by means of a hose connecting the ends of the pipes to the heating systems in the cars. The receiving tank, which replaces the concrete sump generally used, will overcome the difficulty of heating and maintaining a concrete structure, which is almost impossible to maintain water or oil tight, especially when the ground is soft as it is at McBride and Smithers.

The oil in the receiving tank is heated if necessary, by a set of steam coils placed in the centre, the temperature being maintained at a constant heat of 60 degs. Fahr. by an automatic temperature regulating device. From the receiving tank, the oil may be pumped either directly to the service tank, or to the storage tank, in either case through a 6 in. pipe, which ends in an articulated galvanized iron spout, to the extremity of which is attached a float, which keeps the outlet end from 2 to 3 ft. below the surface all the time. To the float is attached an indicator cable, which connects with an indicator in the main floor of the receiving tank building, on the walls of which are indicators for the three tanks. Each pump is capable of filling the service tank in 2 hours. Both pumps may be operated together, or either pump may shut down, allowing the other to work,



a complete system of piping and valves making the arrangement very flexible for operating.

When there are no oil cars available, oil is drawn from the storage tank and pumped directly to the service tank, an 8 in. suction line leading from the floor of central sump of the storage tank, directly under the track to the pumps. Both the inlet and outlet suction pipes, together with the steam lines passing between the buildings, are enclosed in wooden conduits. A system of steam coils with a regulating valve, is placed in the storage tank, to maintain the temperature of 60 degs. Fahr., required by the suction pipe.

A set of steam pipes with a regulating valve, giving a constant temperature of 100 to 110 degs. Fahr. is also placed in the service tank. The oil from the service tank is delivered directly through a spout to the locomotive placed on the outbound track, on the opposite side of the building from the receiving track. This spout, when not in use, is raised and protected from the weather in a recess built into the side of the building. The oil is drawn from the

order to connect the different segments together in the field by riveting. The whole bottom has a slight grade towards the centre, which is made of a shallow tank, 1 ft. deep, shop riveted, and with the top angle turned inside; to this latter the narrow ends of the segments are riveted. This arrangement allows the foundation, made of gravel and sand, to be well prepared, and rolled to a true surface after the placing of the centre part. The different segments are then placed side by side, temporarily bolted, and the riveting completed without disturbing the bottom. In case of an accident, the replacing of a part is easily accomplished by cutting the rivets in the vertical legs of the angles.

The locomotive tenders are being equipped with 3,000 gal. oil tanks, fitted with direct steam heaters. Burners are being placed at the front end of the firebox, the types to be used being the Economy and the Von Boden Ingles. The present intention is to equip each locomotive with one 3 in. burner.

The design of the oil stations was made by J. G. Legrand, M. Can. Soc. C.E., Bridge

very objectionable, especially in very cold weather. These tank cars are not provided with steam heating pipes, and the outlet being only 4 ins. and exposed to the cold weather, it takes a long time to empty the car, and it is almost impossible to empty it completely, the bottom of the car being level, which means that a great quantity of the thick oil stays inside. This quantity may amount to several hundred gallons, according to the severity of the weather, and, of course, quite a reduction in the capacity of the car, outside of having to carry this oil back and forth on the line. To obviate all the above objections, a tank car has been designed as follows

1. On account of the long haulage, the tank car has a capacity of 10,000 imp. galls. The dome is provided with an opening 18 x 36 ins., the cover being hinged and hermetically closed by means of eye bolts and hand nuts. This arrangement will allow an easy opening of the cover in any kind of weather. The opening in the dome is long enough to facilitate the spotting of the car at the oil delivery. The car is so designed that when arriving at a fuel station

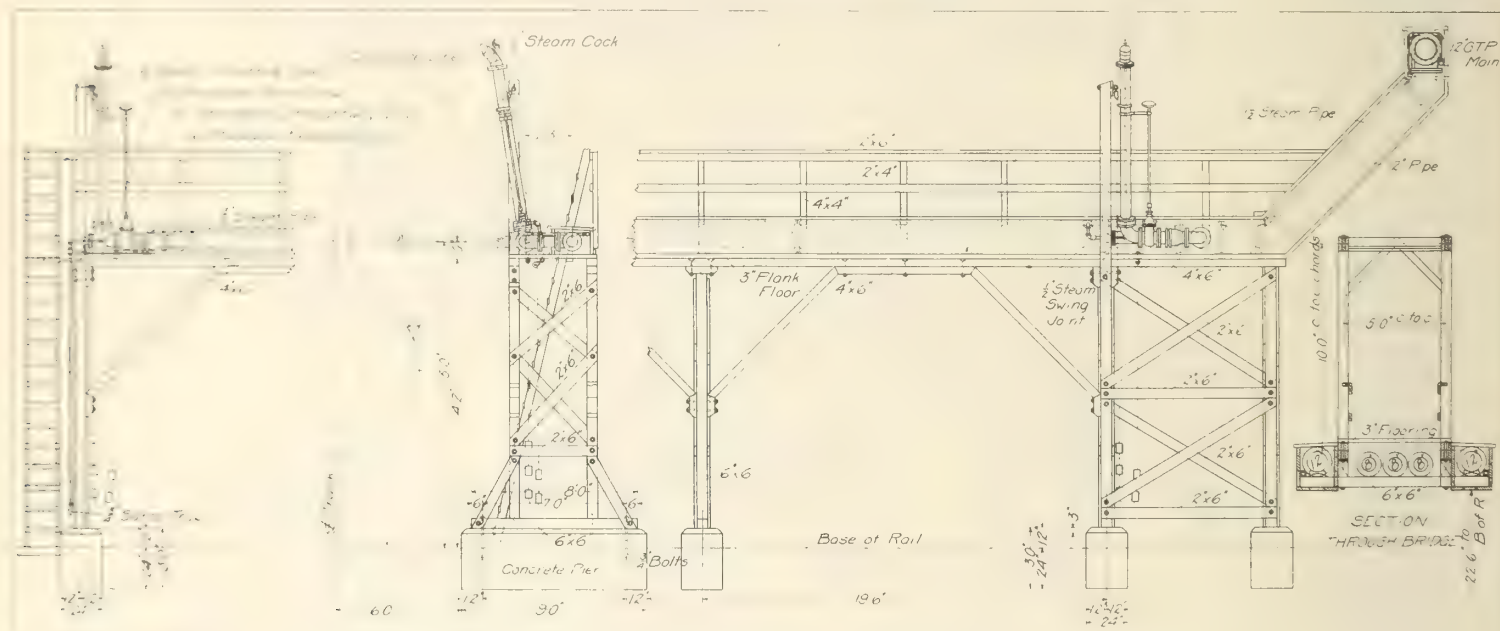


Fig. 2. Grand Trunk Pacific Railway Oil Tank Car Filling Trestle at Prince Rupert, B. C.

bottom of the tank, and in the short connecting pipe from the tank to the spout, there is a self registering pipe line measure, which indicates the amount of oil delivered to each locomotive.

The receiving and storage tanks include a new feature in the design of their bottoms. Usually, these large tanks have a bottom composed of rectangular plates with lap joints, which must be assembled and riveted in the field. The assembling and riveting of such a large bottom is very difficult, and has to be done on staging, which must later be removed while lowering the bottom to the ground. This is often the cause of deformation and rupture of rivets and plates, and the disturbance of the foundation ground, which ought to be well levelled. It is not an unusual occurrence to be obliged to raise the tank several times before water tight joints are finally obtained. Besides these difficulties it is very hard to completely clean the bottom of the tank when necessary, or to replace parts affected by rust or other causes of deterioration. To overcome all of these difficulties, the bottom of the tank is divided into segments of such a size as to be readily furnished by the mills. These segments have small angles shop riveted on them, the vertical legs of which are punched in

Engineer, G.T.P.R., initially under the general direction of B. B. Kelliher, M. Can. Soc. C.E., formerly Chief Engineer, G.T.P.R., and latterly under the direction of H. A. Woods, M. Can Soc. C.E., Assistant Chief Engineer, G.T.P.R.

All the above conveniences to handle oil properly would be offset if the proper cars to transport the oil from Prince Rupert to the different divisional points were not provided. The ordinary oil tank car which is generally used is certainly not suitable for this country, and especially for a long haul, economical handling, and a quick service such as is required on a line like the G.T. P.R. The ordinary tank is usually of too small a capacity, i.e. 8,000 U. S. galls, which would mean transportation of a comparatively heavy dead load for a light quantity of fuel. This would not be economical on a long distance. A great objection to the ordinary car also is that the valve is located about 2 ft. off the centre line, which means that in making up a train careful attention has to be taken to have the car headed the same way, which in railway practice is almost an impossibility. Another great objection to the ordinary tank car is the small opening in the dome, which is generally closed by a round cover, provided with a thread. This arrangement is

it can be spotted, heated and emptied completely, all these operations being done in the shortest possible time.

2. To solve the first condition, that is to say the spotting of the cars, which will be three at a time, the car has been provided with the outlet valve exactly in the centre, and the steam inlets for heating the car, also placed exactly on centre, one on each side of the car. In short, the car has been designed so as it can be headed either way.

3. To solve the second condition, i.e. heating, the car is provided with the piping so arranged that the steam starting from the centre will travel at once towards the two ends, and then come back to the centre around the outlet valve which is provided with a steam jacket, the condensation water being discharged on the ground through a sarco valve with ample capacity to avoid any water remaining in the pipes.

4. To solve the third condition, that is to say the complete emptying of the car, the tank is provided with a trough running longitudinally between the bolsters. This trough, 8 ins. wide, riveted to the bottom of the tank, has a semi-cylindrical bottom and a depth of 6 ins. at the outside extremity and 1 ft. in the centre. The outlet valve is riveted to this trough. Six 6 in. diameter holes and one 6 x 18 in. hole in the centre



will let the oil run through the whole length of the car into the trough. The return steam pipe is placed in the bottom of this trough, and is connected to the steam jacket of the outlet valve. With such an arrangement the oil will be heated thoroughly, and, therefore, run quickly, and the 6 in. fall of the trough towards the outlet valve will allow the car to be emptied completely.

In designing this car, the trough placed under the tank was considered in figuring the thickness of the shell of the tank, and it was found that the strength of such section was 30% stronger than similar section of tank without the trough. This allowed to make this tank with a shell of 5-16 in. throughout, except the two ends, which are 3-8 in. in thickness. The body of the car is composed of a centre sill and two body bolsters, the whole resting on trucks. The centre sill 37½ ft. in length out to out of

of the same capacity being about 44,000 lbs.

The car is provided with necessary walking planks to pass from one car to another, and a platform on the top around the dome to facilitate the operation of filling the tank.

Only 40 cars of such a design will be required to take care of the fuel oil necessary for running trains between Jasper and Prince Rupert, this allowing three cars at each of the six divisional points, while 18 empty cars are going back to Prince Rupert for filling purposes, leaving four cars to spare in case of repair or accident.

### Birthdays of Transportation Men in May.

Many happy returns of the day to:—

Jas. Bain, General Superintendent, Halifax and South Western Ry., Bridgewater, N. S., born at Pictou, N. S., May 24, 1860.

W. R. Baker, Secretary, and Assistant to President, C.P.R., Montreal, born at York, Eng., May 25, 1852.

G. S. Cantlie, ex-General Superintendent Car Service, C.P.R., Montreal, now in military service with Canadian Overseas Forces, born at Montreal, May 2, 1867.

J. Irwin, Superintendent, District 3, Canadian Northern Ry., Dauphin, Man., born at Clinton, Ont., May 28, 1866.

S. McElroy, Trainmaster, Canadian Northern Ry., Rainy River, Ont., born at Lindsay, Ont., May 1, 1875.

J. N. Murphy, Trainmaster, C.P.R., Medicine Hat, Alta., born at Mooretown, Ont., May 10, 1879.

A. C. Shaw, General Passenger Agent, Western Lines, C.P.R., Winnipeg, born at Detroit, Mich., May 12, 1865.

W. Stapleton, District Passenger Agent, Canadian Northern Ry., Saskatoon, Sask., born at Bristol, Eng., May 20, 1884.

E. Tiffin, General Western Agent, Canadian Government Railways, Toronto, born at Hamilton, Ont., May 5, 1849.

J. H. Walsh, General Manager, Quebec Central Ry., Sherbrooke, Que., born at Quebec, May 12, 1860.

H. K. Wicksteed, B.A.Sc., M. Can. Soc. C. E., Chief Engineer of Surveys, MacKenzie, Mann & Co., Ltd., Toronto, born at Quebec, May 25, 1855.

James Yeo, ex-Roadmaster, Intercolonial Ry., Riviere du Loup, Que., born at Bideford, Devonshire, Eng., May 1, 1830.

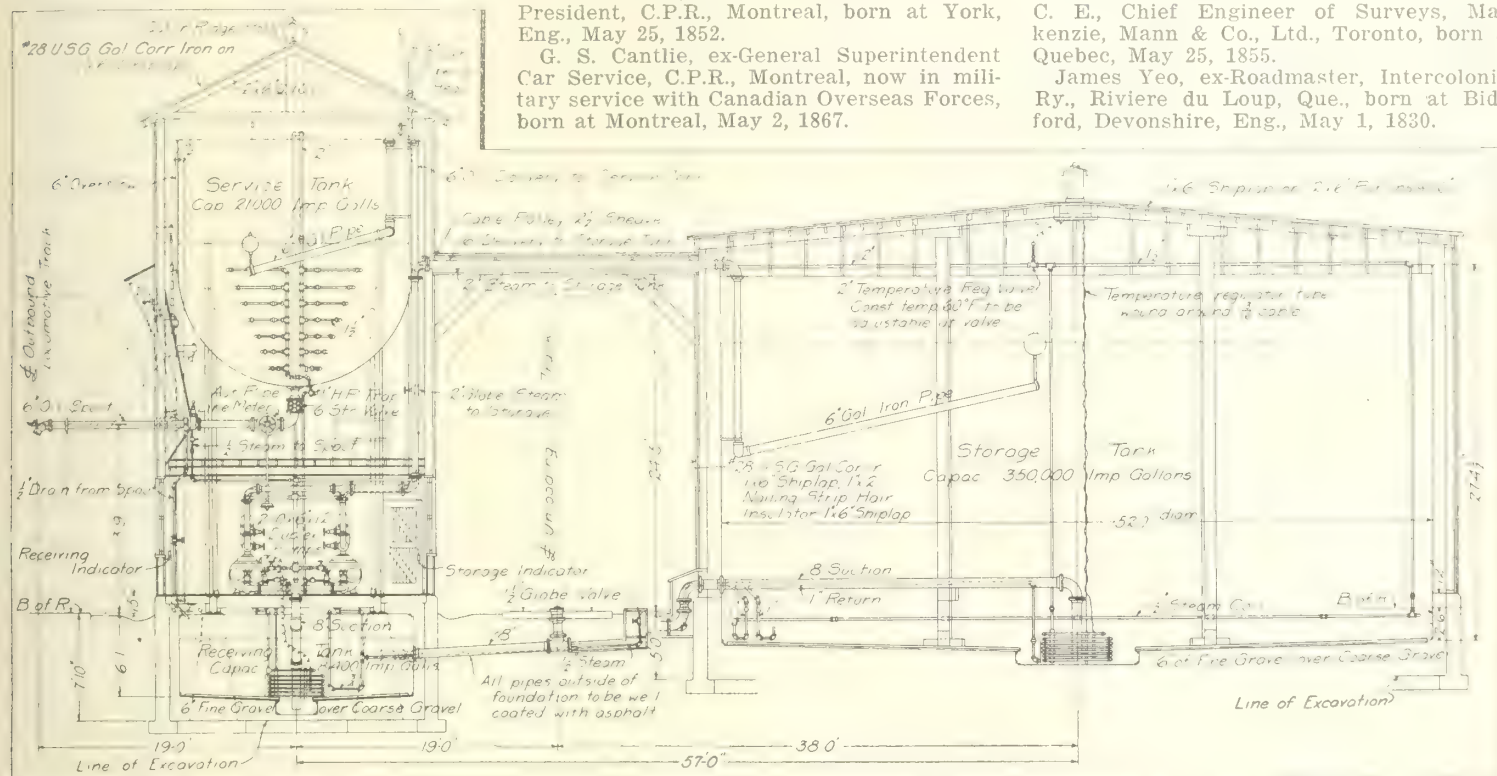


Fig. 3. Grand Trunk Pacific Railway Fuel Oil Station at Six Divisional Points.

striking plates, which means 39 ft. c. to c. of couplings, is made of two 12 in. at 40 lbs. ship building channels (Carnegie section) spaced 12½ in. back to back. The two ends of the centre sill up to the bolsters is covered top and bottom by a ½ in. cover plate. Between the bolsters, the bottom flanges of the two channels are strongly latticed together, and the top flanges are reinforced by two 8 x 3½ x ½ in. angles. The tank is strongly riveted in the centre to the sill in order to transmit any shock which might occur in shunting. The tank rests on two body bolsters. This arrangement allows free expansion from the centre towards the ends. The centre sill as a column will have a safe capacity of 458,000 lbs. (approximately 230 tons), which means a breaking capacity of more than double, which is ample to resist the ordinary impact due to shunting. The body bolsters have cover plates extended in order to act not only as splices for the main material of the centre sill, but also to be able to resist the strain due to "poling." The casting which is placed at each end of the bolster is provided with a pocket to receive the "pole."

The saving of weight due to this kind of design is about 3,500 lbs. per car, the approximate weight of an ordinary tank car

M. Donaldson, M. Can. Soc. C.E., Vice President and General Manager, Grand Trunk Pacific Ry., Winnipeg, born near Edinburgh, Scotland, May 1, 1851.

A. E. Duff, ex-District Passenger Agent, G.T.R., Toronto, now of Winnipeg, born at Sherbrooke, Que., May 1, 1872.

G. C. Dunn, Division Engineer, G.T.P.R., Winnipeg, born at Quebec, May 13, 1862.

G. I. Evans, Superintendent, Angus Locomotive Shops, C.P.R., Montreal, born there, May, 1880.

M. A. Fullington, A.M. Can. Soc. C.E., Assistant Superintendent, District 4, Eastern Division, C.P.R., Ottawa, born at Johnson, Vt., May 12, 1880.

J. Graham, Assistant Roadmaster, C.P.R., North Bend, B.C., born in Ontario, May 22, 1870.

G. H. Hedge, Master Mechanic, Central Division, Canadian Northern Ry., Winnipeg, born at Neath, Wales, May 26, 1865.

T. Henry, Passenger Traffic Manager, Canada Steamship Lines, Ltd., Montreal, born there, May 29, 1865.

W. T. Huggan, Division Accountant and District Passenger Agent, Prince Edward Island Ry., Charlottetown, P.E.I., born at Halifax, N.S., May 24, 1851.

### Northern Pacific Railway's New Coast Line.

The new double track, low grade cutoff line of the Northern Pacific Ry. between Tacoma and Tenino, Wash., 44.3 miles, completes the reconstruction and double-tracking between Seattle, Wash., and Portland, Ore. It also gives a direct train movement through the station at Tacoma, while the old line required a reverse movement of trains. The old line was single track, with 1% grades in both directions and with 2.2 mi. of 2.2% grade ascending southward out of Tacoma. The tonnage rating southbound was 2,000 tons, and three pusher engines were required to help the full tonnage trains on the heavy grade at South Tacoma. The principal comparative features of the old and new lines are as follows:

	New Line	Old Line
Distance, miles .....	44.30	41.26
Max. grade .....	0.3%	2.20%
Max. curve .....	3°	10°
Total curvature .....	1347°	824°
Total rise and fall .....	421 ft.	1244 ft.

The Grand Trunk Ry. System has opened a new city ticket office at 687 Market St., San Francisco.



## Steam Railway Statistics for Year Ended June 30, 1914

In the following table the column headed gross earnings includes passenger and freight earnings, as well as miscellaneous earnings, the latter not being shown separately; the next four columns give the operating expenses classified under their various headings, while the last gives the net earnings, which are arrived at by deducting the totals of the four columns referred to from the figures in the gross earnings column. The minus mark (—) before figures in the net earnings column shows that there was a deficit in the operations of the line to the extent of the figures given. The numbers in brackets—thus (1)—after the name of the railway refer to notes on page 163. The cents have been omitted in all cases, and the figures in the totals show the aggregate earnings, etc., including the cents, omitted from the detailed items.

Name of Railway	Mileage	Passenger Earnings	Freight Earnings	Gross Earnings	Maintenance of Way and Structures	Maintenance of Equipment	Traffic and Transportation Expenses	General Expenses	Net Earnings
Algoma Central & Hudson Bay (1)	242.07	\$ 78,913	\$ 794,102	\$ 955,375	\$ 157,302	\$ 103,587	\$ 373,411	\$ 103,227	\$ 217,846
Algoma Eastern (1)	32.08	21,551	159,915	183,169	25,002	23,241	51,485	7,863	75,577
Atlantic, Quebec and Western (2)	104.50	37,900	28,628	66,681	26,104	16,146	50,851	12,373	—38,794
Bay of Quinte (3)	86.00	46,533	153,355	202,374	49,686	23,187	125,167	8,196	—3,863
Bedlington & Nelson (4)	12.04	158	682	837	9,315	432	770	766	—10,448
Brandon, Sask. & Hudson Bay (4)	69.45	33,936	26,373	60,345	51,906	10,256	55,189	4,879	—61,886
British Yukon	101.12	72,291	134,190	209,681	19,614	9,334	49,168	14,204	117,360
Brockville, Westport & N.W. (3)	45.00	37,773	32,902	70,742	46,721	6,796	27,228	3,831	—13,834
Canada & Gulf Terminal	35.80	22,135	23,492	46,211	7,727	2,293	19,158	5,859	11,174
Canada Southern (5)	380.04	3,513,825	7,041,480	10,613,610	957,452	1,339,119	3,738,277	191,830	4,386,930
Canadian Northern (3)	5,122.95	4,331,633	18,309,989	23,781,328	3,191,805	2,779,374	9,634,409	743,334	7,432,385
Canadian Northern Ontario (3)	658.39	402,774	1,007,551	1,460,286	393,539	254,627	838,509	63,286	—102,075
Canadian Northern Quebec (3)	371.02	438,190	1,200,514	1,671,723	342,638	230,169	855,333	54,039	189,542
Canadian Pacific (6)	11,950.38	37,069,548	80,458,763	119,754,042	16,426,582	16,617,247	45,876,902	2,781,286	38,052,108
Cape Breton	31.00	6,598	4,376	11,440	8,066	3,176	9,449	3,284	—12,536
Caraquet	84.78	23,251	52,420	74,672	18,225	7,281	34,364	8,516	6,264
Carillon & Grenville (7)	13.00								
Central Ontario (3)	149.73	112,143	232,788	347,759	92,850	41,301	197,871	14,236	1,500
Crows Nest Southern (4)	74.18	18,645	116,750	135,730	116,513	39,151	79,776	8,083	—107,695
Cumberland Ry. & Coal Co.	32.00	19,201	87,762	107,419	22,164	4,816	45,809	3,267	33,361
Detroit River Tunnel (5)	1.45								
Dominion Atlantic (6)	274.16	470,507	498,394	980,560	220,981	105,331	421,516	40,711	192,019
Eastern British Columbia	14.00	3,274	43,456	46,999	7,770	4,854	13,595	1,045	19,734
Elgin & Havelock	28.00	3,274	7,117	10,391	5,075	354	3,591	327	1,042
Esquimalt & Nanaimo (6)	152.00	334,827	483,434	841,833	136,969	105,969	252,509	6,219	340,165
Essex Terminal	10.00		46,744	52,378	13,919	2,887	14,083	3,408	18,079
Fredericton & Grand Lake Coal & Railway Co. (6)	35.00	4,440	45,107	49,947	9,778	8,506	19,087	5,968	6,606
Grand Trunk (8)	3,106.13	13,703,832	24,975,944	39,213,178	4,301,747	6,295,654	16,621,835	1,121,802	10,862,138
G. T. R., Canada Atlantic (8)	456.26	564,434	1,757,017	2,383,028	530,252	342,087	1,467,896	72,784	—29,993
Grand Trunk Pacific (8)	1,397.50	1,696,997	6,415,546	8,244,593	1,701,321	2,070,012	3,607,454	210,258	653,445
Halifax & South Western (3)	378.46	272,177	285,005	561,052	151,142	47,524	302,539	26,130	33,415
Hereford (9)	52.18	21,525	100,723	122,801	47,110	29,881	76,288	5,371	—35,815
Intercolonial (10)	1,454.94	4,137,655	8,168,438	12,410,408	2,118,438	2,791,241	7,473,039	318,959	—291,270
International Ry. of N.B.	112.00	49,437	79,642	130,339	26,772	16,152	62,142	12,027	13,244
Inverness Ry. & Coal Co.	60.91	23,231	188,352	212,911	37,998	26,901	50,992	6,694	90,324
Irondale, Bancroft & Ottawa (3)	51.90	9,575	22,113	32,332	14,688	4,890	14,643	2,283	—4,173
Kent Northern	27.00	8,704	11,543	20,247	7,090	3,725	8,871	645	—83
Kettle Valley	22.20	807	6,492	7,302	9,682		1,854	629	—4,864
Klondike Mines	31.81		112,175	112,175	11,807	3,395	25,372	11,542	69,057
London & Port Stanley (14)	23.66	40,884	93,373	135,841	25,088	31,257	116,339	8,230	—45,073
Lotbiniere & Megantic	30.00	7,310	22,927	30,259	9,471	4,681	9,193	4,226	2,687
Magnetawan (8)	1.91								
Maine Central, Princeton Brch. (9)	5.10	11,326	6,756	18,082	2,106	2,265	9,292	718	3,699
Manitoba Great Northern (4)	91.77	6,942	36,552	44,007	60,869	8,961	38,966	4,393	—69,112
Maritime Coal, Ry. & Power Co.	15.00	7,420	63,823	71,244	15,303	5,367	24,595	2,547	23,430
Massachusetts Valley (11)	35.46	70,839	139,971	212,199	56,479	42,450	117,266	11,110	—15,106
Midland of Manitoba (4)	6.40	188,695	127,735	326,865	119,217	48,042	265,677	15,891	—121,964
Moncton & Buctouche	32.00	10,586	18,122	29,762	11,630	2,052	15,479	2,630	—1,541
Montreal & Atlantic (6)	163.40	243,348	751,153	1,018,077	365,129	115,883	522,405	33,740	—19,081
Montreal & Province Line (8)	58.60	60,342	74,893	137,588	52,215	4,876	43,934	2,429	34,132
Montreal & Vermont Jct. (8)	23.60	62,346	69,758	132,273	29,721	10,386	42,400	4,532	45,231
Morrissey, Fernie & Michel	10.85	13,516	136,627	150,144	13,915	28,393	63,241	21,902	22,692
Napierville Junction (12)	27.06	8,651	96,243	105,054	9,885	6,349	36,836	3,183	48,798
National Transcontinental	286.30	12,706	61,790	75,067	54,069	3,641	47,580	414	—32,638
Nelson & Fort Sheppard (4)	55.42	27,030	36,558	66,331	62,254	7,207	42,471	5,043	—50,644
New Brunswick & P.E.I.	36.00	13,180	32,968	46,353	14,303	7,696	16,150	3,193	5,008
New Brunswick Coal & Ry. Co. (6)	58.00	14,864	35,910	55,458	29,998	17,523	24,352	6,456	—22,872
New Westminster Southern (4)	23.73	10,494	33,791	47,324	13,316	3,229	13,015	2,381	15,380
North Shore	8.63	205	619	825	70		899	18	—163
Northern New Bruns. & Seaboard	19.80	2,989	18,505	21,494	3,775	996	7,927	2,035	6,759
Nosbonsing & Nipissing (13)	5.50								
Ottawa & New York (5)	56.90	94,009	150,244	260,123	88,582	37,056	127,381	9,141	—2,038
Pere Marquette Rd. (14)	198.81	197,970	2,151,848	2,362,025	243,456	578,323	908,784	73,927	557,533
Phillipsburg Ry. & Quarry Co. (7)	6.00								
Pontiac & Renfrew (7)	4.25								
Prince Edward Island (10)	279.23	216,383	184,342	414,911	153,263	96,350	312,628	16,777	—154,109
Quebec & Lake St. John (3)	286.40	317,285	602,641	934,777	221,276	129,485	449,205	45,847	88,962
Quebec Central (6)	253.00	457,087	1,092,900	1,568,020	198,315	176,794	654,577	63,776	474,556
Quebec, Montreal & Southern (12)	192.18	161,121	244,774	411,635	184,173	145,098	187,960	18,419	—122,014
Quebec Oriental (2)	100.00	57,692	77,072	134,825	35,480	15,238	61,905	13,170	9,029
Quebec Ry., Light & Power Co.	30.82	13,380	72,732	87,159	10,424	15,204	36,146	8,296	17,088
Red Mountain (4)	9.50	3,177	11,818	15,246	15,167	907	14,331	1,243	—16,404
Roberval & Saguenay	36.80	4,875	26,211	31,950	8,695	6,083	19,177	2,814	—4,820
Rutland & Noyan (5)	3.39	9,315	5,597	14,912	3,587	2,295	5,991	656	2,384
Salisbury & Albert	45.00	12,364	25,021	36,140	9,557	3,432	14,118	3,238	5,793

(Continued on page 163)



## Steam Railway Statistics for Year Ended June 30, 1914 (Continued from page 162)

Name of Railway	Mileage	Passenger Earnings	Freight Earnings	Gross Earnings	Maintenance of Way and Structures	Maintenance of Equipment	Traffic and Transportation Expenses	General Expenses	Net Earnings
Schomberg & Aurora.....	14.40	\$ 6,103	\$ 7,901	\$ 14,005	\$ 6,544	\$ 314	\$ 7,207	\$ 166	—227
Stanstead, Shefford & Chambly (8)	43.00	41,277	49,107	89,960	49,440	6,532	39,715	2,316	—8,038
St. Clair Tunnel (8).....	1.13	72,790	273,531	347,770	17,435	14,389	72,561	3,289	240,095
St. Lawrence & Adirondack (5).....	46.12	281,056	369,882	653,538	109,743	13,483	346,249	13,833	168,227
St. Martins .....	30.00	5,772	8,626	14,551	5,221	833	6,958	976	561
Sydney & Louisburg.....	69.95	55,528	725,116	807,167	101,544	172,277	276,101	30,695	226,547
Temiscouata.....	113.00	65,871	200,945	271,776	52,041	27,568	101,629	18,917	71,819
Timiskaming & Northern Ontario	334.03	638,750	975,842	1,690,688	440,322	260,034	685,142	107,388	196,901
Thousand Islands.....	6.33	13,446	23,594	40,683	7,712	2,660	14,979	4,077	11,254
Toronto, Hamilton & Buffalo 5,6,15	80.15	450,551	1,040,305	1,502,331	276,331	198,086	565,975	44,923	417,014
Vancouver, Victoria & Eastern (4)	236.31	253,197	495,520	770,594	423,610	93,647	389,796	31,282	—167,743
Victoria & Sidney (4).....	15.97	30,519	24,987	56,468	45,824	4,467	26,652	4,923	—25,399
Victoria Terminal Ry. & Fy.Co.(4)	0.99	2,446	1,746	4,876	909	282	1,686	311	1,686
Wabash Rd. in Canada (16).....		690,404	1,831,217	2,526,897	298,180	607,555	1,324,458	105,597	191,095
Wellington Colliery Co.....	10.75	4,342	100,237	104,579	19,782	39,637	45,159		
York & Carleton.....	10.50	2,085	3,592	5,677	1,199	205	2,306	20	1,945
	30,794.54	\$72,564,203	\$ 165,753,730	\$ 243,083,539	\$35,292,226	\$36,375,330	\$ 100,665,669	\$6,642,032	\$64,108,280

## Notes to Steam Railway Statistics.

The total mileage of 30,794.54, given in the foregoing table, is the actual length of the railways being operated at June 30, 1914; but the total mileage reported as being operated by the different companies was 31,483.03, a difference of 688.49 miles. This is accounted for by the fact that various companies operate over portions of the tracks of other companies, particulars of which will be found in these notes. The total railway mileage reported at June 30, 1913, was 29,303.53, which included the following mileages omitted from the lines reported June 30, 1914: Bessemer and Barry's Bay Ry., 5 miles; Bruce Mines and Algoma Ry., 17.28 miles; Victoria Copper Co.'s Ry., 12 miles, railways which while still existing had not been operated for some years.

The following railways appear in the report for the first time: Detroit River Tunnel, 1.45 miles; Fredericton and Grand Lake Coal and Ry. Co., 35 miles; National Transcontinental Ry., 286.30 miles; Northern New Brunswick and Seaboard Ry., 19.80 miles; Roberval and Saguenay Ry., 36.80 miles.

(1) The Algoma Central and Hudson Bay Ry., and the Algoma Eastern Ry. are owned by the Lake Superior Corporation.

(2) The Atlantic, Quebec and Western Ry., and the Quebec Oriental Ry. are operated jointly.

(3) The Canadian Northern system embraces the following lines: Bay of Quinte; Brockville, Westport and Northwestern; Canadian Northern; Canadian Northern Ontario; Canadian Northern Quebec; Central Ontario; Halifax and South Western; Inverness Ry. and Coal Co.; Irondale, Bancroft and Ottawa; Quebec and Lake St. John. The Bay of Quinte operates 19.00 miles; the Canadian Northern 6.60 miles, and the Halifax and South Western 2.30 miles, under trackage rights.

(4) The Great Northern Ry. (U.S.A.) owns the following lines in Canada: Bedlington and Nelson; Brandon, Saskatchewan and Hudson Bay; Crows Nest Southern; Manitoba Great Northern; Midland Ry. of Manitoba; Nelson and Fort Sheppard; New Westminster Southern; Red Mountain; Vancouver, Victoria and Eastern Ry. and Navigation Co.; Victoria and Sidney; Victoria Terminal Ry. and Ferry Co. The Manitoba Great Northern operates 0.99 mile; the Midland of Manitoba, 69.02 miles; the Nelson and Fort Sheppard, 5.42 miles; the New Westminster Southern, 1.48 miles; and the Vancouver, Victoria and Eastern, 1.48 miles, under trackage rights.

(5) The Canada Southern and the Detroit River Tunnel are owned by the Michi-

gan Central, which in its turn is controlled by the New York Central. The N. Y. C. R. also owns the Ottawa and New York, and the St. Lawrence and Adirondack, and controls the Rutland, which owns the Rutland and Noyan. It also owns, with the C.P.R., the Toronto, Hamilton and Buffalo. The Canada Southern operates 16.76 miles under trackage rights; the Ottawa and New York, 1.94 miles, and the St. Lawrence and Adirondack, 8.50 miles, under trackage rights. The Detroit River tunnel is operated as a part of the Michigan Central, and the earnings, etc., are included with those of the Canada Southern.

(6) The Canadian Pacific operates under lease or control the following lines: Dominion Atlantic; Esquimalt and Nanaimo; Fredericton and Grand Lake Coal and Ry. Co.; Montreal and Atlantic; New Brunswick Coal and Ry. Co., and Quebec Central. The C.P.R. also owns with the New York Central, the stock of the Toronto, Hamilton and Buffalo. The C. P. R. operates 93.90 miles; and the Dominion Atlantic 14.29 miles, under trackage rights.

(7) The Carillon and Grenville, the Phillipsburg Ry. and Quarry Co.'s line, and the Pontiac and Renfrew were not operated during the year.

(8) The Grand Trunk system includes the following lines: Canada Atlantic, Montreal Province Line, Montreal and Vermont Jct., Stanstead, Shefford and Chambly and St. Clair Tunnel. The G.T.R. also owns the Grand Trunk Pacific. The G.T.R. operates 10.10 miles, and the G.T. Pacific 6.20 miles, under trackage rights. The statistics of the operation of the Magnetawan are included in the G.T.R. ones.

(9) The Hereford, and the Maine Central (Princeton branch, New Brunswick), are owned by the Maine Central.

(10) The Intercolonial and the Prince Edward Island are owned by the Dominion Government. The Intercolonial operates 40.30 miles, under trackage rights.

(11) The Massawippi Valley is owned by the Boston and Maine. It operates 2.95 miles under trackage rights.

(12) The Napierville Jct. and the Quebec, Montreal and Southern are owned by the Delaware and Hudson Co.

(13) The Nosbonsing and Nipissing, 5 miles, is included as railway mileage, but we were officially informed, Dec. 10, 1913, that the track was removed during the summer of that year. (Jan., 1914, pg. 25.)

(14) The Pere Marquette also operates over 136.78 miles under trackage rights. The P. M. operates the London and Port Stanley

under lease. The L. and P. S. R. operates 0.42 mile under trackage rights.

(15) The Toronto, Hamilton and Buffalo, which is owned jointly by the C.P.R. and the New York Central, also operates 4.36 miles under trackage rights.

(16) The Wabash does not own any main line track in Canada, but operates over 245.40 miles, which it leases from the G.T.R.

## A Novel Use of Canadian Railway and Marine World's Birthday Column.

A little over a year ago G. W. Vaux, General Agent, Union Pacific System, Chicago, and formerly General Passenger Agent, G.T.R., Montreal, took out a life assurance policy for \$5,000 in the Manufacturers Life Insurance Co., and was of course called on for proof of age. Following is an extract from a letter he wrote in this connection:

"We have a large Bible History, which has been in our family since 1873, in which appears in my mother's hand writing the entry that I was born Mar. 21, 1866. In the same volume there is entered in my hand writing the birthday of each member of my father's family and each member of my own family. Then again I enclose a page taken from Canadian Railway and Marine World for Mar. 1915, in which you will find my name included showing that I was born on Mar. 21, 1866, under the heading 'Birthdays of Transportation Men in March.' This latter information has appeared in the same publication for at least five years, probably longer. Under these circumstances, will you, if necessary, take up with the Manufacturers Life and ascertain if this information will be regarded as satisfactory proof of age."

The information Mr. Vaux gave as above was accepted as satisfactory and a certificate was issued admitting proof of age.

**Railway Lands Patented.**—Letters patent were issued during February, covering Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows,—

	Acres.
Calgary and Edmonton Ry. ....	5,698.00
Canadian Northern Ry. ....	2,880.00
Canadian Pacific Ry. ....	169.00
Edmonton, Dunvegan and British Columbia Ry. ....	12.27
Qu'Appelle, Long Lake and Saskatchewan Rd. and Steamboat Co. ....	321.00

Total ..... 8,970.27

The brick arch in locomotives is a great aid in smoke elimination, as it increases the travel of the gases, and gives them a chance to combine with the oxygen of the air before coming in contact with the comparatively cool firebox sheets.



out comparison must be added the time required to check and notify the delinquent and the time taken by him to submit his watch after he is notified. This additional time may be from one day to a week, or possibly longer, depending upon the promptness of action, the frequency of facilities for communication and the accessibility of the employe. If he has in the meantime been transferred to another division, the methods in effect on most roads require the records to pass through the files of two superintendents or other officers in charge



port" opposite which the inspector makes the entries as to rating, setting or regulating. This report is the ordinary form used for the purpose by roads generally and is furnished in the usual distinctive colors for locomotive men and trainmen. The inspector, at the end of each week, sends this report to the Superintendent of Time Service. The entries which the inspector makes on this report and the mailing of same constitute perhaps the greater part of his clerical duties imposed by this system. Of course, he makes out the certificate when the watch is examined, as required by rule 2, and the usual rating and repair cards and a weekly report showing repairs made and the nature of such repairs. He is not required to keep any records and he makes no report whatever to the superintendent or any other officer except the Superintendent of Time Service.

The Superintendent of Time Service keeps a card index file showing the watch record of each employe coming under time service regulations. Fig. 1 shows the face and fig. 2 the reverse side of the form used for this purpose. A new watch record card is made out for each employe at the beginning of the year from information furnished by superintendents, other officers and inspectors. A card is made for a new employe upon his entry into service requiring time service regulation.

It will be noted that the record card, in addition to providing space for the information required by the certificate and details as to clearing and repairing, is ruled and printed with names of the twelve months and the dates of Saturday in each of the 52 weeks. On the reverse side of the card, in the column headed "Add On," is entered the name of the superintendent or other officer by whom the man is employed, and the column headed "Strike Off," the name of the officer whose jurisdiction the employe may leave together with dates

record cards. When an employe leaves the service, either temporarily or permanently, or transfers to the territory or jurisdiction of another officer, his name is shown under the heading "Strike Out" of the form shown in fig. 3 by the officer whose service he leaves. On returning to the service or re-

delinquents, which is information of importance to all concerned.

We are aware that this method of handling time service records may be subject to objections, but experience has convinced us that such objections are more apparent than real. In any event, we think the ad-

GRAND TRUNK PACIFIC RAILWAY			
TIME SERVICE			
			Form 18-1
			Division
To SUPERINTENDENT OF TIME SERVICE, WINNIPEG, MAN.			
The following are changes on watch inspection lists for the week ending .....191....			
			(Sign here).....Head of Department
<b>STRIKE OUT.</b>			
Name	Occupation	Division	State if left service or transferred to
(Note.—The form has 7 horizontal lines here.)			
<b>ADD ON.</b>			
Name	Occupation	Division	State if new employe or transferred from
(Note.—The form has 6 horizontal lines here.)			
Heads of departments will send this report to the Superintendent of Time Service, Winnipeg, on the first day of each and every week. If no changes send "Nil" report.			

Fig. 3.—Strike Out and Add On form, size 8¼ x 10¾ inches.

porting to the officer to whom he is transferred, the officer receiving him shows his name under the heading "Add On" of the form.

Employes coming under time service regulations, whose names do not appear under the heading "Strike Out" of the weekly report from the superintendent or other

vantages far outweigh the disadvantages. We will, however, enumerate and discuss both, as we understand them, and leave it to the reader to decide the proposition for himself. The possible objections are:

1. Time consumed in transmitting reports from inspectors to headquarters and information from such reports back to officers along the line. If, in fact, this feature really resulted in more time being taken to reach delinquents, comparison being weekly, the service would not suffer thereby. However, for reasons which will appear later, it works out in practice that in most cases a delinquent is reached as quickly, and in some cases even quicker, as he is in fact (not theory) reached under other systems.

2. That before an employe can be adjudged delinquent, it is necessary to check the "Comparison Reports" of all inspectors and the "Strike Out and Add On Reports" of all officers. In answer to this, it may be said that when a check of the two reports is once made—and it requires no great amount of time to do it—the Superintendent of Time Service knows, not only the men who are delinquent, but also in most cases where they are located in the service, and can, therefore, reach them at once through the proper officers and thus avoid the delay which would otherwise be occasioned by correspondence between officers in order to notify delinquents who have transferred from the jurisdiction of one to that of another.

Objection no. 2 (if it be an objection) also applies under certain conditions, in a different manner, but to the same effect, to other systems, because under none of them is an employe forbidden to submit his watch to any inspector, other than the one to whom he is assigned, when special circumstances render it necessary or advisable for him to do so. In such cases, if the employe or the special inspector fails to notify the regular inspector before the latter makes his report (which not infrequently happens), the employe is reported delinquent and his superior officer traces him, only to find that he is not delinquent. By the one system, you start after an employe before you really know whether he is or is not delin-

GRAND TRUNK PACIFIC RAILWAY	
OFFICE OF THE SUPERINTENDENT OF TIME SERVICE	
Mr.	Winnipeg, Man., .....191....
Dear Sir:	
Following is list of men shown by you as coming under Watch Inspection Regulations, week ending.....who failed to make comparison:—	
Following men not eligible for service, account not having presented order of examination to an Inspector:—	
Total number of men shown in service:—	
Percentage delinquent:—	
Superintendent of Time Service.	

Fig. 4.—Form for Reporting Delinquency, size 8¾ x 10¾ inches.

and other details, the entries being kept up to show every time an employe enters and leaves the service and reenters, and all shifting movements from different jurisdictions.

The information called for by the reverse side of the record card is furnished each week by superintendents and other officers on the "Strike Out and Add On Form," shown in fig. 3.

On the receipt each week of the "Strike Out and Add On Report" and the "Comparison Report," the Superintendent of Time Service makes proper entry of the information contained in such reports on the watch

proper officer, should be shown on the "Comparison Report" of some one inspector—it makes no difference which one—and all names shown on that report are checked as having submitted their watches for comparison during the week ending on the date checked. Employes whose names do not appear on either report are apparently delinquent, and the Superintendent of Time Service at once calls this fact to the attention of the proper officer, using for this purpose form shown in fig. 4. It will be observed that this form calls attention to the number of men shown in service, the number delinquent and the percentage of



quent. In the order, you consult all records first and know what you are doing before you make a move.

3. The clerical help required by the Superintendent of Time Service to enable him to keep the records in the manner described. The force of this objection is largely destroyed by the fact that the one extra clerk necessary to keep the records in this way saves each month a large part of the cost of his services in the reduction, thereby made possible, of clerical work in the various offices having to do with time service regulations. The objection entirely disappears when considered from the standpoint of good service.

The proven advantages are:

1. **BETTER RECORDS.**—A large percentage of inspectors have not the proper facilities for making or keeping records. They are not, as a rule, paid any direct compensation for their services, and do not ordinarily employ extra help to look after this feature of the business. They are subject at all times to interruption by their patrons and others, and the smaller the amount of clerical work imposed upon them, the better for all concerned.

2. **RECORDS CENTRALIZED.**—This advantage becomes apparent in its mere state-

ment without further comment.

3. **GREATER PROMPTNESS.**—An inspector knowing that his reports are required at a certain time by one certain officer, whose attention is devoted solely to time service, will soon find by experience that his reports must be forwarded when due in order to escape the inevitable "call" which he would otherwise get from the officer in charge. There being really no reports of any extent for the inspector to make, there is no reason for delay on his part in forwarding such as are required.

4. **MORE RELIABILITY.**—After all, the true merit of any system is its reliability, and from this standpoint we believe this system is unequalled by any other. Time service, important as it is, is of such a nature that there is, to say the least, a tendency on the part of some officers to regard it as a detail of no great consequence. Where the local inspector reports to the superintendent or other officer along the line, such officer, while really in charge of time service in his territory, must necessarily handle it as a side issue. It generally means turning the subject over to a clerk, and if he is pressed with work and is compelled to delay something, there is a high percentage of chances that time service matters will be delayed.

## The Mechanical Life of Ties as Affected by Ballast.

By E. Stimson, Engineer Maintenance of Way, Baltimore and Ohio Railroad.

The wooden cross tie, transmitting the heavy axle loads from the rail to the ballast, is subjected to mechanical wear not only from the action of the rail on top of the tie, but also from the action on the sides and bottom of the tie of the ballast which supports it.

The most familiar causes of the deterioration which makes necessary the removal of the ties from the track are, decay, splitting, mechanical wear under the rail, spike killing, burning due to dropping coals from locomotives and damage by wrecks. While the influence of these factors is felt on all classes of track from isolated sidings to the highest type of main track, tie destruction from mechanical wear of ballast seldom occurs to any appreciable extent excepting in occasional stretches of crushed stone, or other forms of hard ballasted tracks where a soft roadbed or a sink requires continual raising of track and tamping of ties in order to maintain good track surface. The wearing away of ties by ballast, is the result of tamping the ballast under the tie and the action of the tamping tool striking the side and edge of the tie rather than the action of the tie bearing upon and working in the ballast under train loads. There is but little mechanical wear due to the tie working in the ballast.

After ties are first put into the track and tamped to surface on hard ballast, the necessity for retamping to surface and consequently the wear of the ties by ballast depends largely upon the nature of the subgrade. Good surface and subsurface drainage usually insures solid road bed where the normal bearing value of the material qualifies it for heavy loading. Where such conditions prevail, track surface is maintained with a minimum amount of tamping and the mechanical effect of the ballast on the ties is negligible. Wet cuts and fills, roadbed sinks and side hill slips produce conditions for which the track as a whole suffers. They are responsible in the majority of cases for bad surface and alignment and can therefore be said to be the underlying cause of tie deterioration from mechanical wear of ballast. Such conditions are usually local and limited in their

extent over any stretch of track and the total mileage of roadway involved composes only a small percentage of the total roadway of any railroad system. The removal of the cause, and the restoration of the stability of the roadway, in many cases involve heavy expense, for which reason the conditions are often allowed to remain, making necessary the continual employment of forces raising the track and tamping the ties to surface. Thus the roadway conditions are responsible for the excessive tamping and wearing away of the ties. As this does not involve a relatively large number of ties, and as usually the prevention is often difficult and expensive, to some extent, this excessive track maintenance and consequent tie wear from ballast will inevitably exist as long as wooden ties are used.

Ties which are removed after service in hard ballasted track are found to be pitted or indented on the bottom and sides from contact with the stone or other ballast material. These indentations in the tie are a valuable factor in holding the track in line and surface as long as they are not increased by frequent tamping. The continual tamping of the ballast under the tie soon rounds off the edges of the ties, leaving little or no flat bearing surface for support. When this happens the tie acts as a wedge and tends to force the ballast out into the cribs instead of receiving full support from it. It typifies the worst conditions; however a tie seldom becomes rounded to this extent throughout its entire length. The greatest wear occurs from 6 to 8 ins. either side of the rail and practically none directly under the rail. In track maintenance the best practice is to tamp the tie for its full bearing upon the ballast outside of the rail and for an equal distance inside of the rail. In spite of close supervision, however, this is not always done, but instead the trackman expends his efforts toward tamping up solid as near the rail as he can work with a tamping pick. This wears off the edge of the tie for some distance each side of the rail and leaves a short unworn edge directly under the rail. When a tie becomes rounded on the

bottom at the most essential tamping point and becomes difficult to maintain to surface, it is then found more economical to replace it with a new tie having a flat bottom that will necessitate less tamping. The average trackman feels little hesitancy about removing a tie for this cause when he has difficulty in keeping it tamped. Even in cases of most excessive tamping, wear from ballast does not become objectionable until the tie has been in service from 50 to 75% of what its life would be under normal conditions. The kind of ballast and kind of ties used and the standard at which a track is maintained, are all important factors in the consideration. Slag and stone, when crushed, form hard, sharp, angular fragments that appear, from observation, to be more destructive when tamped under wooden ties than gravel, burnt clay, cinders, granulated slag or other similar forms of ballast. Ballast of the last named materials has little or no effect in wearing down the sides and bottom of the ties, nor is the tamping of this kind of ballast so destructive to the ties, as the particles are smaller, generally of softer material and rounded in form. There is a perceptible difference in the resistance offered against mechanical wear by ties made from the different kinds of wood. Hard wood ties of rough texture withstand the action of the rail cutting and of excessive tamping much longer than ties of soft wood. It has been observed that these ties which are most durable under the mechanical wear of the rail also last longer under the wear of ballast, for instance—white oak, chestnut oak, black walnut, maple and beech are more suitable than yellow pine, fir, catalpa, cedar and red wood.

Here it is important to mention the extent to which some forms of ballast increase the abrasive action of the rail upon the tie. Granulated slag, gravel, cinders, chatts and other forms of ballast carrying fine gritty particles contribute largely to the rapidity of the abrasive action between the rail and the tie or between the tie plate and the tie, thus greatly accelerating the mechanical wearing away of the wood. It has been observed that the cutting of the rail into the tie is much greater where fine ballast is used than where coarse, hard ballast is used. This trouble has been largely overcome by use of flanged bottom plates which become embedded in the tie, and by plates fastened directly to the tie by lag screws, independent of the rail spiking, thus reducing the movement between the plate and tie to a minimum. However, many ties are removed from track each year because of deterioration from rail wear and a large amount of this deterioration can be assigned to the effect of the fine particles of ballast grinding under the rail.

A careful study of the wearing effect of ballast upon ties during tie removal seasons where the actual cause of deterioration under roadbed and track conditions can plainly be seen, is convincing evidence that such wear along the bottom edge only injures the ties where tamping is necessary at quite frequent intervals.

Regarding the use of treated ties where extraordinary wear by ballast is known to exist; the same rule might apply that is observed when the mechanical wear under the rail limits the life of the tie. Treatment to prevent decay does not give the tie increased resistance to abrasion, and ballast abrasion that is so severe as to wear out an untreated tie would preclude the possibility of any benefit from the use of treated ties at locations where such abrasion occurs.

The ballast has little direct effect on the mechanical life of the ties. The finer and



lighter ballasts such as gravel, cinders, granulated slag, etc., hasten the rail cutting on the top of the tie by the finer particles working under the rail. The coarser and heavier ballasts, such as crushed stone and slag, bruise and cut into the bottom and the sides of the ties largely under tamping. Comparatively few ties are destroyed from this latter cause, while many more are removed from track on account of the former.

A substantial, well drained roadbed, and a clean, hard ballast, free from fine particles and coarse enough to insure against holding water, affords the best foundation for the tie, one that will hold to a minimum the wave motion of the rail which, aided by the abrasive agent, the fine gritty bal-

last, so rapidly cuts into the ties, and one that will hold the surface of the track, eliminate the sinks and slides, pumping joints with the attendant pounding of the ties into the ballast, and lastly the excessive tamping up.

The desired roadbed condition must usually be made with the materials available, aided by tiling and trench drains. The ballast, however, may be selected. A hard, durable stone, crushed in angular fragments, in size from one inch to three inches, screened free from all dust and dirt, is the ballast that will least affect the mechanical life of the tie.

This paper was read before the American Wood Preservers' Association in Chicago recently.

## The Bridging of the St. John River Between St. Leonard, N. B., and VanBuren, Me.

An event of international importance is expected to take place on May 1, when a new gateway will be opened for traffic between Canada and the northernmost tip of the eastern United States, where the Van Buren Bridge Co. has just completed the building of its short line of railway, including a bridge over the St. John River, between the Bangor and Aroostook Rd. system in VanBuren, Maine, and the National Transcontinental Ry. and Intercolonial Ry. in St. Leonards, N.B.

The length of the new line is 1.36 miles, of which 1.19 miles is the property of the bridge company, extending from the United States bank of the St. John River to a connection with and crossing of the National Transcontinental Ry., thence to a crossing of a branch line of the C.P.R., and thence to a junction with the International Branch of the Intercolonial Ry., the two grade railway crossings being protected by electric power interlocking signals controlled from a signal tower at the N.T.R.

The river, which at this point measures from bank to bank 970 ft., is crossed by a bridge consisting of 5 single track steel riveted lattice through spans of 160 ft. each (skew 77°), supported on two concrete abutments and four concrete piers, with approach embankments thoroughly protected by riprap. The distance from base of rail to extreme high water is 9.7 ft., and to low water 45.7 ft., the range between these two water stages being 36 ft. The depth of water at normal stage in the thread of the stream varies from 15 to 20 ft. The abutments are of the usual splay-wing type, placed on concrete piles, 20 to 23 ft. long, driven with considerable resistance in a soil consisting of clay mixed with sand and gravel. The piers are built with rounded downstream ends and moulded inclined starkwaters, the bridge seat or upper of the two top courses being 8 ft. wide and 31 ft. long, and the width under the corbel course 6½ ft. The batter of the sides and downstream ends is ¾ in. per foot, and of the upstream end or starkwater 4 ins. per foot. Two of the piers are 52 ft. and the other two 48 ft. from the bottom of footing course to top of the bridge seat. The piers are each founded on from 104 to 106 spruce piles, approximately 20 ft. long below cutoff, driven in the hard, gravelly clay that underlies the bed of the stream. All piers have their bases well protected with riprap. The spans are designed for E-50 Cooper loading (2 consolidated locomotives, with 50,000 lbs. on each driving axle, followed by a trainload of 5,000 lbs. per lineal foot), equivalent to the "heavy" class loading prescribed in the specifications of the Department of Railways and Canals of Canada, and complying with the requirements of the 1911 bridge

specifications of the American Railway Engineering Association.

Perhaps the most marked feature of this work has been the rapidity of its construction, 7½ months only having elapsed from its commencement to its completion. Started in the middle of Sept., 1914, excavation and the laying of concrete were vigorously prosecuted throughout the winter, although the temperature usually hovered around zero, and at times very much lower. This was made possible by enclosing the piers in housings, heated with steam pipes and salamanders, so as to afford the concrete an opportunity to become thoroughly set prior to exposure to low temperatures. Steel erection from the Canadian shore was started in January, and followed closely on the heels of the substructure, the last pier, on the U.S. side, having been finished early in April. Through the employment of the cantilever method of erection, all risk of serious damage or interruption from a premature breakup in the river was obviated.

The principal contractors were Cyr Brothers Co. of Waterville, Me., for the substructure; the Dominion Bridge Co., Montreal, for the superstructure; Hill & Hammond, Woodstock, N.B., for the roadbed, tracklaying, ballasting, fencing and telephone line, and the General Railway Signal Company of Canada, Lachine, for the interlocking plant.

Percy R. Todd, of Bangor, Me., President of the Bangor and Aroostook Rd., is also President of the VanBuren Bridge Company; W. J. Wilgus, New York, was consulting engineer, and T. A. Lang, Resident Engineer, on the bridge construction.

The VanBuren Bridge Co. has given out the following statement: "The establishing of this route will mean a great deal to a large section of New Brunswick and Quebec, and to the portion of northern Maine known as Aroostook County, embracing an area nearly as great as the entire State of Massachusetts. New Brunswick will be benefited by having a new and direct line to the markets of central and southern New England, the distance to Boston from the timber lands, lumber mills, fisheries and pleasure resorts centring at Campbellton, on the Bay of Chaleur, being over 200 miles shorter than via the old routes through Levis and Sherbrooke. Towns and shipping points located upon the portion of the National Transcontinental Ry. between Moncton, N.B., and Levis, Que., will profit by this short line to the same New England territory, and another outlet will be offered to the products of the virgin country tributary to the recently completed National Transcontinental Ry. west of Quebec. Viewed from the other standpoint, Aroostook County will be able to tap the Cana-

dian supply of raw materials, and will be in closer touch with the grain, flour and provision supplies of the west, as the distance from Chicago to the VanBuren gateway, via the G.T.R. and the National Transcontinental Ry. is identical with the distance via the old route to the southern end of the Bangor and Aroostook system at Northern Maine Jct. The opening of the VanBuren bridge route promises much for the people of both countries, heretofore separated for some 350 miles along the International Boundary neighboring the St. John River."

Rail should be laid as early in the spring as possible, weather permitting, and should be delivered, when possible, on flat cars, the full length rails being loaded separately from the short lengths.

A camp for tourist accommodation will be operated in Jasper National Park on the line of the Grand Trunk Pacific Ry. in British Columbia next summer. It will be run on hotel lines at from \$2.50 a day up.

Sir Percy Girouard, has, according to a London cablegram, resigned as a director of Sir W. G. Armstrong Whitworth & Co., on his appointment temporarily as a major general. It is also said that he will probably resign the presidency of Armstrong Whitworth of Canada, Ltd.

The Pacific Great Eastern Equipment Co. has been incorporated under the Dominion Companies' Act, with a capital of \$3,000,000, and office in Vancouver, B.C., to purchase, hire, or otherwise acquire, or make, build or manufacture railway cars, locomotives, or other rolling stock; deal in rails, contractors' equipment, appliances, tools, etc., and to sell the same on hire or otherwise to railway companies, contractors, or others, and to carry on other enterprises germane to these objects. The provisional directors are: P. Welch, E. F. White, E. W. Kaufmann, A. H. Sperry, and D. C. Pennington, Vancouver, B.C., all of whom are associated with the Pacific Great Eastern Ry.

Hand Rails and Foot Rests on Locomotives and Tenders.—At a preliminary conference in Ottawa, April 8, between representatives of the Board of Railways Commissioners, the principal railways and the brotherhoods of locomotive engineers, locomotive firemen and enginemen, the question of hand rails on cabs of locomotives and foot rests around same at the same elevation as the running boards was discussed, but no agreement was reached, and the Board will at a sitting in Ottawa on May 4 consider the representations of all parties interested in the matter of requiring hand rails to be placed on cabs of locomotives and foot rests around same at the same elevation as the running boards; also hand rails on tenders of certain types of locomotives.

International Mercantile Marine Co.—On application of the New York Trust Co., claiming default of interest on \$52,744,000 of 4% collateral trust bonds, P. A. S. Franklin, Vice President, International Mercantile Marine Co., was appointed receiver for the company Apr. 4, by the U. S. District Court at New York. A statement issued on behalf of the bondholders' committee, intimates that it is understood that the receivership will only retain proportions directly owned by the International Mercantile Marine Co., such as the American Line and the Red Star Line, and that it will not in any way affect the so called English subsidiary companies such as the White Star, Atlantic Transport, Dominion and Leyland Lines. The operations of the main company, or of its subsidiaries will not be interfered with by the receivership.



# Railway Mechanical Methods and Devices.

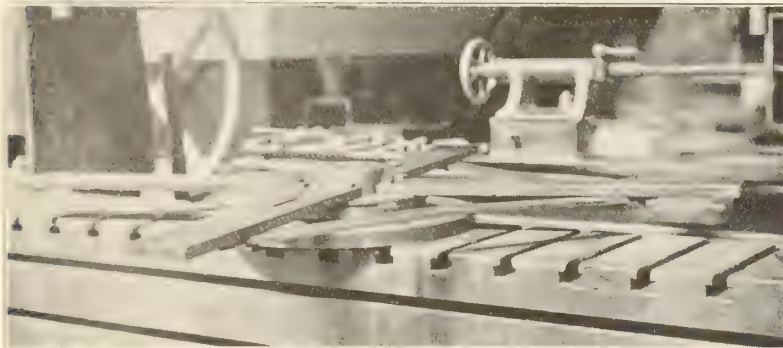
## Fixture for Drilling Holes on a Diameter.

In drilling holes for bolts or studs on a large diameter on an article that is bulky, the size of the work makes the labor involved out of all proportion to the size of the holes being drilled, from the awkwardness of the article in setting up in the machine. Ordinarily, it is the custom to fix the work upon a trestle, and shift the whole member for each hole, or else, if performed on a radial drill, block the work up in some stationary position, and shift the drill arm

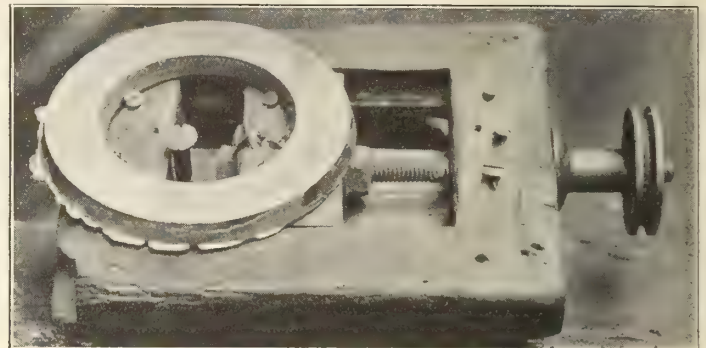
The smoke box door frame to be drilled is lifted on the jig by a small overhead jib crane, resting on the jig, and one of the drill heads can be centred over the stud hole diameter, and the drilling proceeded with, the frame revolving easily from point to point as required, the ball bearing making the effort required very light. The time taken when under observation on two regular jobs is as follows: drilling and tapping sixteen  $\frac{3}{4}$  in. holes, 40 mins.; drilling twenty four  $\frac{3}{4}$  in. holes, 20 mins. These times include the setting up, machining and removing.

the end of the frame. In the top of the frame and crosshead there are small wood screws, projecting about  $\frac{1}{2}$  in., by means of which the ring may be held either on the inner diameter or outer diameter, leaving most of the surface free to be operated on.

A small air operated circular saw on a table, mounted on the bench near the point where the rings are finished, was described in Canadian Railway and Marine World for Dec., 1912. This saw is used for removing the larger fins, sprue, etc., after which it is placed in the jig, just described, for final finishing.



Jig for Drilling Holes in Smoke Box Door Frame.



Jig for Holding Valve Stem Packing Rings for Filing.

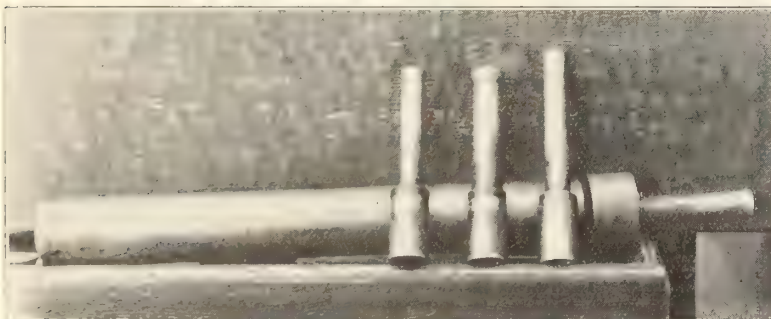
to suit. For small holes, the tying up of a radial drill for light work is not economical. Likewise, on an ordinary drill, to shift the work between holes necessitates the use of two operators, one to handle the machine, and the other to assist in shifting between holes.

In the G.T.R. shops at Stratford, Ont., a convenient jig has been made for handling such jobs on a gang drill, which requires only the services of the drill hand to perform all the shiftings. It is used with great success on smoke box door frames and wheel centres, both of which have a number of holes on large diameter. The accom-

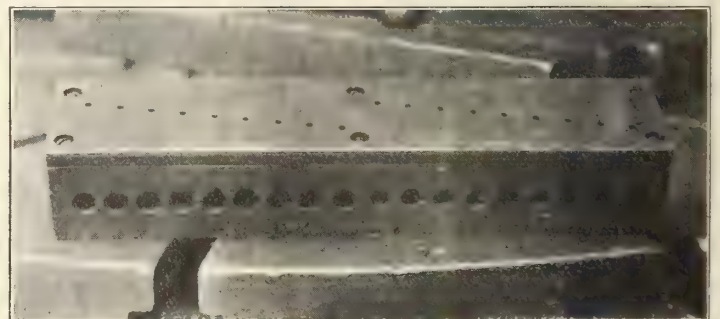
panying illustration shows the jig set up for drilling truck wheel centres the jig is slightly changed. The holding down clips for the upper member are removed, and with them the top member. Another top member, with a boss of the inside diameter of the wheel centre, the lower face of which is also channelled for a ball race, is placed in position, and the operation proceeds as before. The times observed on three occasions were as follows: drilling seven 25-32 in. holes in a cast iron wheel centre, 30 mins.; drilling twenty four 25-32 in. holes in a cast steel wheel centre, 75 mins.; and drilling twenty eight 25-32 in. holes in a cast steel wheel centre, 70 mins.

## Slotter Tools for Forked Ends.

In slotting the forked ends of rods by the usual methods, it is customary first to drill the slots with a drill of a diameter corresponding to the width to be slotted, and then run the slotting tool first along one side of the slot, and then along the other. This meant two passes for each slot. On consideration of this problem in the G.T.R. shops at Stratford, Ont., a tool was eventually developed that can handle this work in one pass, and at the same time do, if anything, a better job, as the spring of the



Slotter Tool for Forked Ends and Key Holes.



Jig for Drilling Cotter Pin Holes in Pins.

panying illustration shows the jig set up for holding smoke box door frames. It consists of a circular base casting, bolted to the drill table, in the top of which there is an annular ball race. On top of this there is a smaller circular casting, in the base of which there is a corresponding annular ball race. In the outer diameter of this top member there is a groove, into which radial tongues, bolted to the lower member, fit, the object of the latter being to prevent the upper member from tipping when loaded with the member to be drilled. The upper member is free to revolve on the balls in the raceway. From the upper member there are four radial arms of bar iron, bolted at the inner end by two cap screws to the upper member, and tied to each other by bar iron tie rods on the under side.

## Jig for Holding Valve Stem Packing Rings in the Vise.

For holding the various sizes of valve stem packing rings in the vise for trimming the fins that are left on in the casting, and for filing off the sprue defect and other small surface blemishes, the G.T.R. shops at Stratford, Ont., uses a handy little jig, that from the viewpoint of simplicity in design and general utility, leaves little to be desired. It consists of a wooden frame, as shown in the accompanying illustration, in the centre of which there is a small wooden crosshead, guided in small channels in the side legs of the frame, and actuated by a screw and hand nut passing through

tool does not enter into the task.

The accompanying illustration shows the way in which the tools are made, three tools being shown standing, with a fourth in the holder used. The tool is a formed one, machined all over, the cutting end being made the diameter of the width of the slot to be machined. It is relieved for about  $\frac{1}{2}$  in., with a straight shank as long as the depth of the work to be slotted requires. The opposite end of the tool is enlarged to fit the holder. The holder is a hollow tube, about 24 ins. long, one end of which is bored to receive a stop block. From the block face to the end is slightly under the length of the enlarged end of the tool. A knurled nut fits over the end of the holder, fastening the tool securely in the holder.



In operation the tool required is placed in the holder, and the work centred under it so that the tool is directly over one of the drill holes. The machine is then fed along the line of the slotted end or key hole, which is finished to the correct width in the one pass. A large number of sizes are kept in stock for the various widths machined.

### Jig for Drilling Cotter Holes in Pins.

The jig shown in the accompanying illustration, used in the G.T.R. shops at Stratford, Ont., is a handy contrivance for drilling in the exact position, the cotter pin holes on the ends of small pins. Instead of marking off the hole in the desired position, and then removing to a drill press for drilling the holes in a V block, this locates the hole and holds the pin for drilling.

The jig consists of a cast iron block, drilled horizontally with holes of the size of the pins to be drilled. On the upper face of the jig there is a tempered steel plate, drilled with holes the size of the cotter pin holes. It will be observed that these holes are drilled at varying distances from the near face, the distance from the near face to the near edge of the cotter pin drill hole representing the length of the pin from the head to the cotter hole. The pin to be drilled is slipped into the desired hole until the head is flush with the near face, and drilled in that position, the pin being automatically located for position and centred.

Several such jigs are in use for various sizes of pins and cotters. Each jig is stamped with the size of pins and cotter pin holes, all that the operator requires to do being to measure off the required length of the several holes. The jig shown is for 9-16 in. pins on the left and  $\frac{1}{2}$  in. pins on the right, in both cases for 5-32 in. cotter pins.

### Increasing Drill Holding Capacity of Small Drill Press.

It was desired to increase the drill holding capacity of one of the smaller drill presses in the G.T.R. shops at Stratford, Ont. This could not be done by increasing the socket hole size in the drill spindle, as it was considered that the socket in the spindle was as large as the latter could safely hold, without undue weakening. The accompanying illustration shows how this was simply accomplished. A short bar of steel, about  $\frac{3}{4}$  in. larger in diameter than the drill spindle, was bored out to a depth of about 2 ins., the diameter of the drill spindle, and this bushing slipped over the spindle end. Through both socket and spindle a key was fitted. The lower end of the socket was turned down on the outside to a slightly smaller diameter than the spindle, and a larger sized drill socket taper bored in the end, with a drift pin hole in the top. By this simple means larger drills may easily be used in drill presses designed initially for smaller sizes of drills. The capacity of the drill press would seem to be the only limit to the size of special socket that might be made for any drill.

A simple method of annealing high speed steel is to place it in a tube or pipe long enough in diameter and length to accommodate the work, both ends of the pipe being secured with a screw cap. Before screwing on the cap, place in the tube from a tablespoonful to a handful of resin, then screw on the cap and place in a furnace at the proper temperature, heat for 6 hours, and let the pipe and contents cool with the furnace to atmospheric temperature.

### A Flue Rattler.

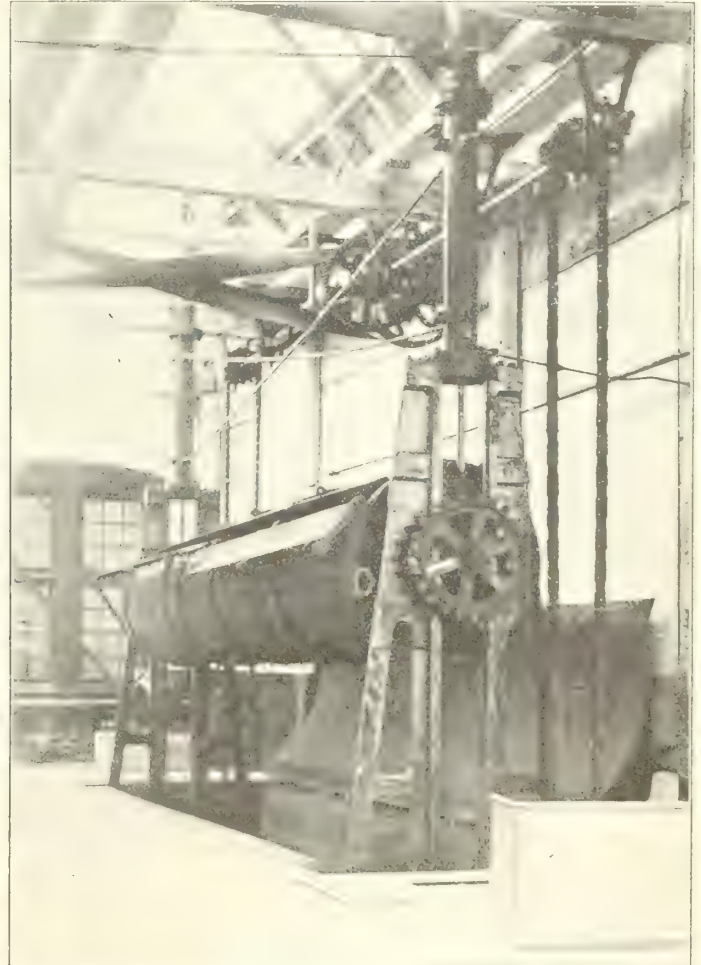
In Canadian Railway and Marine World for Nov., 1912, the practice in vogue at the G.T.R. shops at Stratford, Ont., for safe ending boiler tubes was described in detail. With the exception of the flue rattling, the process, as then used, is pretty much the same today. In addition to the equipment then in use, a similar set of machines for handling the superheater flues has been added, but the practice with these tubes is almost identical, only on a larger scale. The flue rattlers then in use were of the elevated drum type, enclosed in wooden chambers, with water poured in on the tubes in the revolving drums to facilitate the breaking up of the scale. This arrangement, while performing the work satisfactorily, was very noisy, and largely on that

chain gear wheels which, when the drum is in lower position in the pit, engage with chains, the upper ends of which pass over a smaller chain gear on an overhead shaft. This counter shaft is driven from a central shaft, in the upper left hand corner of the illustration, which receives its power from a belt at the far end, driven from an electric motor in the far corner.

In operating, the drum is raised just above the floor level and filled with tubes, which are carried from the erecting floor on cars that will hold the full locomotive set. The doors are then closed and the drum lowered, the chains being slipped on as the drum descends. The pit is filled with water, so that the rumbling of the tubes in the rattler is deadened, and the scale removal facilitated by the presence of the water. While in operation the large sheet iron door



Socket to Hold Larger Drills than Spindle Socket Allows For.



Flue Rattler.

account, as well as to produce a machine that could be handled more expeditiously, another arrangement has been developed in the Montreal shops, and which is used at Stratford. This is shown in the accompanying illustration. The old plant was in duplicate; similarly with the new one.

The rattler drum is 5 ft. in diameter, and 20 ft. long, with outwardly swinging doors for feeding in the tubes. These doors, of which there are two, are fastened in position by pins. The rattler drum is carried on trunnions in crossheads that are guided in vertical cast iron guide frames, which descend about 8 ft. into a concrete pit. On the upper end of the guide frames there are vertical hydraulic plungers, the lower end of the piston rods in which connect with the drum crossheads. By this means the drums may be raised or lowered. On both of the trunnion shafts there are large

thrown back against the wall is lowered over the pit. A guard frame at both ends protects the moving driving chain.

Both rattlers are housed in a room at one end of the main shop, the other rattler of the pair being on the left of the one shown. The floor of this shop is paved with steel sheeting, which makes the moving of the tube trucks very easy.

**Spark Arresters for Locomotives.**—Owing to experiments and investigations now under way in connection with spark arresting device for use on locomotives burning non-coking coal the Board of Railway Commissioners has decided to await the results of the same before considering definitely the amendment of regulation 2 of general order 107 suggested in circular 141 of Jan. 25.



## Railway Development.

### Projected Lines, Surveys, Construction, Betterments, Etc.

**Alma and Jonquieres Ry.**—In the act passed recently by the Quebec Legislature, amending the act of incorporation the company is given power to operate its line by steam or electricity or "by both at the same time." The route of the projected line, for which an extension of time was granted, is also definitely described, as starting from Labarre or St. Gideon, on the Quebec and Lake St. John Ry., or some point between, to Little Discharge, thence to the Isle of Alma, to Grand Discharge, and through the townships of Sigau, Labarre, Kenogami and Jonquieres to Jonquieres, on the Q. and L. St. J. Ry., 30 miles. (April, pg. 136.)

**Athabaska and Fort Vermillion Ry.**—The route proposed to be followed by this projected railway, the construction of which has been authorized by the Alberta Legislature, will be from Athabaska to Wabiscow, then northerly to Trout Lake and Fort Vermillion, a total distance of about 300 miles. The capital stock authorized is \$1,000,000, and the company may issue bonds for \$20,000 a mile for its railway, and further sums for acquiring land and laying out terminals. (April, pg. 136.)

**Athabaska and Grand Prairie Ry.**—The Dominion Parliament has incorporated a company with this title to build a railway from the junction of the Salmon and Athabaska rivers, in Alberta, to Dunvegan and the Grand Prairie country west of Bear Lake, B.C. (See Athabaska, Grand Prairie and Peace River Ry., Feb., pg. 56.)

**Athabaska Northern Ry.**—The Dominion Parliament has granted an extension of time for the building of this projected railway from Edmonton to Athabaska Landing, Alberta. (Jan., pg. 10.)

**Bassano and Bow Valley Ry.**—A recent press report said: "The construction of the Bassano-Coronation Ry., 110 miles, will shortly be commenced by the firm of Grant Smith and McDonnell Co." We have been advised by the Grant Smith and McDonnell Co., Vancouver, that the newspaper report was the first intimation they had heard of the matter.

The project to which this item refers was originally started in 1912, when the Bassano Power and Electric Co. was organized provisionally. This company secured a franchise for the building of an electric railway in Bassano and vicinity, for which it was proposed to ask for incorporation under the title of the Bassano Power, Light and Electric Traction Co. In Oct., 1912, the project was reported to be "past history." Subsequently in 1913, the Alberta Legislature decided to grant subsidies towards the building of light railways in the Province by guarantee of bonds for \$7,000 a mile, and a charter was given the Bassano and Bow Valley Ry. Co. to build a railway from Bassano for 40 miles through the C.P. R.'s Alberta irrigation district. Nothing further was heard of the project until the company obtained power from the Legislature to operate its railway by any kind of motive power, to extend its line to Coronation, to increase its bonding power from \$14,000 to \$20,000 a mile, and to extend the time for the construction of the line. When the bill was before the Legislature it was stated that work on the mileage from Bassano to the Red Deer River, about 40 miles, would be gone on with this year. The Red Deer River would be reached at Bull Pound Creek, and the line would then proceed up the valley of that creek, crossing one of the Canadian Northern Ry. lines at Richdale, and continuing to Coronation. F. H.

Whiteside, who had charge of the passage of the bill in the Legislature, is reported to have stated that the charter had been acquired by the Grant Smith and McDonnell Co., and another press report stated that J. A. Campbell, Alberta, Manager for the same firm, had said construction gangs would be put on as early as possible in the spring, and that the grading would be rushed. (April, pg. 136.)

**British Columbia and White River Ry.**—An extension of time has been granted by the Dominion Parliament for the building of this projected railway from Bear Creek, at the mouth of Chilkat Pass, B.C., to White River, and then on to the boundary between Yukon and Alaska. (Feb., pg. 56.)

**Brule, Grand Prairie and Peace River Ry.**—The Dominion Parliament has incorporated a company with this title to build a railway from Brule Lake, Alberta, via Grand Prairie to a junction with the Pacific Great Eastern Ry. in the Peace River district, with a branch from Grand Prairie to a junction with the projected Pacific, Peace River and Athabaska Ry. near the Montagneuse River. (April, pg. 136.)

**Brule Lake Ry.**—The Alberta Legislature has incorporated a company with this title to build a railway from near Brule Lake, mileage 994 on the Grand Trunk Pacific Ry., easterly, through tps. 26 and 24, tp. 49, range 27, west, and then northeasterly through sections 19, 20 and 27, tp. 49, range 26. (Mar., pg. 94.)

**Calgary and Fernie Ry.**—The Dominion Parliament has granted an extension of time for the building of this projected railway from Calgary, Alberta, to Fernie, B.C. (Feb., pg. 56.)

**Canadian Terminal Ry.**—The route of this projected railway is from Pennfield, N.B., on the C.P.R., southwesterly to Beaver Harbor, L'Etang and Black's Harbor, eight miles. The New Brunswick Government is being asked to guarantee the bonds for \$20,000 a mile. (Mar., pg. 94.)

**Canadian Western Ry.**—An extension of time has been granted by the Dominion Parliament for the building of this projected railway from the International Boundary through Pincher Creek, Cowley and along the Old Man River Valley to the Livingstone Mountain, and thence to Calgary, Alberta, with a branch to Michel, B.C. (Feb., pg. 56.)

**Cariboo, Barkerville and Willow River Ry.**—The Minister of Railways has approved route map of this projected railway from Barkerville, at the junction of the Clearwater and North Thompson rivers, B.C., in the direction of the Willow River, for 170 miles. (May, 1913, pg. 219.)

**Central Canada Ry.**—In the Alberta Legislature, Mar. 30, the Premier stated that the provincially guaranteed bonds for the building of this line from McLennan, on the Edmonton, Dunvegan and British Columbia Ry., to the Peace River Crossing had not been sold. The company, however, upon its own initiative had built 25 miles, and was continuing the construction of the remaining 22 miles to the crossing. As it was important that this piece of line be completed, the Government asked the Legislature to authorize it to advance to the company, on the security of its bonds and the guarantee of the E. D. and B. C. Ry., out of any unappropriated funds in the hands of the Provincial Treasurer, an amount not exceeding the present provincial guarantee and not exceeding 80% of the cost of the

line, to be repaid when the bonds were sold. The formal resolution authorizing this and an act setting out the conditions were subsequently passed.

The Legislature has also authorized the company to build a line from the Alberta and Great Waterways Ry., between tps. 64 and 65, easterly to the Alberta-Saskatchewan boundary. The line will pass through a fairly well settled district, and will touch some extensive timber limits. (April, pg. 136.)

**Edmonton, Dunvegan and British Columbia Ry.**—Track laying was reported to have reached Big Smoky River, mileage 290, from Edmonton, Mar. 31. A temporary bridge is being built across the river so as to get supplies across for the completion of the 70 miles of track to Spirit River settlement. It is not proposed to start work on the permanent steel bridge across Smoky River until the winter. It is expected that track laying will be completed to the Spirit River early in the fall. The projected branch through the Grand Prairie country will start from Spirit River settlement.

The Alberta Legislature has authorized the Government to affix the provincial guarantee to bonds for \$20,000 a mile for the building of a branch through the Grand Prairie country, about 60 miles.

The Dominion Parliament has granted an extension of time for the building of the extension of the line from Spirit River, Alberta, to a junction with the Pacific Great Eastern Ry. at the Alberta-British Columbia boundary, and has authorized the building of an additional line starting from tps. 77, 78 or 79, ranges 3, 4, 5 or 6, west of the 6th meridian, through Grand Prairie district, to Jasper House, Alberta. (April, pg. 136.)

**Entwistle and Alberta Southern Ry.**—The Dominion Parliament has incorporated a company with this title to build a railway from Entwistle, Alberta, southerly to the Saskatchewan River, on the boundary between tps. 57 and 58 west of the 5th meridian, Alberta, 60 miles. (April, pg. 136.)

**Essex Terminal Ry.**—An extension of time has been granted by the Dominion Parliament for the completion of the lines authorized to be built in Windsor, Ont., and vicinity. (Nov., 1914, pg. 500.)

**Fraser Valley Terminal Ry.**—The Dominion Parliament has incorporated a company with this title to acquire, construct, maintain and operate within the municipalities of Richmond and New Westminster, B.C., railway yards, terminals, and all that is necessary for the handling of traffic of whatsoever nature; to build tunnels, viaducts and bridges, wharves, docks, workshops, powerhouses, etc., and to build railway lines not to exceed in any one case 20 miles, to connect any of its terminals with the C.P.R., the Canadian Northern Pacific Ry., or any other railway having lines in the municipalities named. The authorized capital is \$2,000,000, and the company may issue securities for \$40,000 a mile. The provisional directors are: C. F. Pretty, C. N. Pretty, T. T. Dauphinee, T. R. Pearson, J. B. Noble, Vancouver.

Application was originally made for incorporation with the title of the Vancouver Terminal Ry., with Vancouver as the centre of its operations, but owing to the opposition of the city of Vancouver, the title was changed and the location of terminals was fixed in Richmond and New Westminster municipalities. (April, pg. 137.)

**Greater Winnipeg Water District Ry.**—The Dominion Government has granted a 300 ft. right of way through all the Dominion land through which the 80 mile line passes, between St. Boniface and the Shoal Lake bay of the Lake of the Woods.



At a meeting of the Commissioners, Mar. 26, it was reported that up to Mar. 10, there had been received \$1,304.38 for passenger fares, and \$6,146.77 for freight tolls from the operation of the line, while the actual cost of train crews, rent of rolling stock, motive power and supplies had been \$3,406.94. An arrangement is being made with the railways having connection with the transfer yard at Paddington for the handling of traffic originating on the District line. (Mar., pg. 94.)

**Glengarry and Stormont Ry.**—Officials of the C.P.R., which will operate this railway running from St. Polycarpe, Que., to Cornwall, Ont., 28 miles, made a trip of inspection over it recently. The ballasting is being completed, and it is expected to have everything ready for starting operations about June 1. (Jan., pg. 10.)

**The Hudson Bay, Peace River and Pacific Ry.** Co.'s application to the Dominion Parliament for a change of name to that of the Winnipeg and Hudson Bay Ry., an extension of time for construction, and other additional powers, was withdrawn from further consideration, Mar. 25. (April, pg. 136.)

**Huntingdon and Hemmingford Ry.**—The route of this projected railway is definitely described in sec. 1, of the act passed by the Quebec Legislature recently, granting an extension of time for construction as reaching the International Boundary line where it is crossed by the Delaware and Hudson Ry. between Lacolle, Que., and Rouse's Point, N.Y. (Mar., pg. 136.)

**Kettle Valley Lines.**—The K. V. Ry. extending from Midway, B.C., on the C.P.R. Crownsnest Pass line, to Merritt, the terminus of the C.P.R. Nicola branch, which joins the main transcontinental line at Spence's Bridge, is expected to be opened for traffic in June. The mileage of the important points from Midway are: Penticton, 134 miles; Princeton, 204 miles; Merritt, 272 miles, and the distance from the latter point to Spence's Bridge is 40 miles. The opening of this line will give the C.P.R., which leases the K. V. lines, another alternative route to and from the Pacific Coast. The distance between Winnipeg and Vancouver by the new route will be 1,811 miles, against 1,484 by the main transcontinental line through Calgary and Banff, and 1,657 miles by the route through Dunmore Jct., Crownsnest, Kootenay Landing, West Robson and Revelstoke.

The line from Midway to Princeton, 204 miles, has been built by the K. V. Lines, the contractors for the section from Osprey Lake into Princeton being Guthrie, McDougall and Co., who were engaged in building the Vancouver, Victoria and Eastern Ry. in the same vicinity. From Princeton to Otter Summit, the K. V. Lines will operate over a section of the V. V. and E. Ry., which is now being ballasted. The company's original plan for an independent line from Osprey Lake to Otter Summit, 65.5 miles, as described in Canadian Railway and Marine World, Mar., 1914, pg. 80, is being held in abeyance. The section from Otter Summit to the Fraser River, 52.3 miles, is being built by the K. V. Lines, and will be operated jointly with the V. V. and E. Ry. This section, it is expected, will be completed in the autumn. The bridge across the Fraser River at Hope is reported completed, and track laying is being proceeded with to effect a junction with the C.P.R. there.

The Dominion Parliament has granted an extension of time for the building of the following branch lines: From Penticton to the International Boundary at Osoyoos Lake; from Summer Creek via Allison or Princeton to the junction of the Granite Creek with the Tulameen River; from One

Mile Creek to the Copper Mountain and Voigt mining camps, 15 miles southwest of Princeton; from Vernon, southerly by Kelowna to Penticton; from the second of the above mentioned lines northerly to Otter Summit, about 30 miles south of Merritt; from near Tulameen for about 50 miles up the Tulameen River valley from Grand Forks for 50 miles up the north fork of the Kettle River; from Midway to Hedley, and from Penticton to Nicola. (Mar., pg. 94.)

**Lake Erie and Northern Ry.**—The question of the electrification of the completed section of the line is under consideration. W. P. Kellett, who has been General Manager and Chief Engineer from the inception of the project has resigned. M. N. Todd, President, Berlin, Waterloo, Wellesley and Lake Huron Ry., (formerly Galt, Preston and Hespeler St. Ry.), has been appointed General Manager to succeed him.

The contractors for the line southerly from Brantford to Port Dover have been getting things in order to complete that section during this year. It is expected that if the Brantford-Galt section is electrified the southern section will also be operated by the same motive power. (Feb., pg. 57.)

**Medicine Hat Spur Tracks.**—The Alberta Legislature has passed an act respecting the city of Medicine Hat, which among other things confirms a bylaw authorizing the borrowing of \$11,700 for the construction of spur tracks to the industrial section of the city.

**Moncton and Northumberland Strait Ry.**—The Dominion Parliament has granted the company an extension of time for the construction of its projected lines from Buctouche to Richibucto; from Richibucto to Chatham or Loggieville; from Pains Jct., to Cape Tormentine, N.B., and from Westpoint to Coleman, P.E.I. (Jan., pg. 10.)

**North Ry.**—Replying to a question in the Senate, Mar. 31, Senator Loughheed said the Dominion Government had acquired from the company the portion of its projected railway from Montreal to the proposed junction with the National Transcontinental Railway. The agreement to take over the project was signed Dec. 23, 1914, and a cheque for \$250,000, the amount of purchase, was issued on the following day. Under the agreement the company has to settle all outstanding claims and turn over to the Department of Railways all information relative to surveys, and all field notes, plans, etc., in connection therewith, together with office furniture, etc. The company had a subsidy for the building of the line at the usual rate, and upon the regular conditions, which lapses upon the transfer to the Government. (June, 1914, pg. 266.)

**North Vancouver Island Ry.**—The Minister of Railways for British Columbia has granted an extension of time for the building of this projected railway from Rupert Arm, Quatsino Sound to Hardy Bay, Vancouver Island, under the provisions of sec. 79, chap. 19.4, Revised Statutes of British Columbia. (June, 1912, pg. 301.)

**Northern Pacific and British Columbia Ry.**—The Dominion Parliament has incorporated a company with this title to enter into arrangements with the Vancouver, Victoria and Eastern Ry. and Navigation Co., for running rights over its lines into Vancouver, and to acquire land and lay out terminals in Vancouver, New Westminster, and other points on such lines, between Huntingdon and Vancouver. (April, pg. 136.)

**Pacific Great Eastern Ry.**—The Minister of Railways for British Columbia has approved a map showing the general location of a proposed line from Davie Lake to Azzuzetta Lake, Pine Pass, Caribou district, B.C. (April, pg. 137.)

**Pacific, Peace River and Athabaska Ry.**—

The Dominion Parliament has authorized a change in the location of the Pacific coast terminus, from the mouth of the Naas River, to the Kitimat arm, and thence to the Naas River. An extension of time for construction was also granted.

The Minister of Railways for British Columbia has granted an extension of time to the Naas and Skeena River Ry., the charter of which has been acquired by the P., P. R. and A. Ry., for the building of its projected railway from Nasoga Gulf to the Skeena River, under the provisions of sec. 79, chap. 19.4, Revised Statutes of B. C.

We are officially advised that the tramway which it is proposed to build at Vermillion Falls, on the Peace River, by the company's subsidiary, the Peace River Tramway and Navigation Co., will be standard gauge, and five miles long. It will be operated by steam at first, but when the power plant at the Vermillion Falls has been developed, electricity will be used. The oil field which it is proposed to prove and develop at this point is believed to represent the anticlinal fold. It is proposed to build a steamboat at Peace River Crossing during this year, which it is hoped to have ready for the traffic which will be brought to that point on the opening of the Edmonton, Dunvegan and British Columbia Ry. The company also proposes to build another tramway, about 15 miles long, between Smith's Landing and Fort Smith, to overcome the Drowned, Pelican, Mountain (3), and Cossette rapids, six in all, on that stretch of the Slave River. (April, pg. 137.)

**Prince Edward Island Ry.**—The House of Commons has voted the following sums: To strengthen bridges, \$10,000; original construction, \$800; power plants, \$125; surveys and inspection, \$10,400; to increase accommodation and facilities along the line, \$17,600; to provide car ferry, construct terminals and necessary connections, \$1,900,000.

In the House of Commons recently the Minister of Railways stated that the car ferry was completed, but the piers on the island and on the mainland were not ready. Owing to this, and the fact that there was a difference of \$5,000 between summer and winter insurance, the builders were holding the ferry until spring. Considerable difficulty had been met with in building the piers, particularly at Carleton Point, P.E.I. There was no doubt that the piers would be sufficiently completed by September to enable them to be used, although they might not be fully completed. It was intended to operate the car ferry during the winter, the contract calling for ability to make half a mile an hour in the worst ice conditions. (Dec., 1914, pg. 544.)

**Simcoe, Grey and Bruce Ry.**—The Dominion Parliament has granted an extension of time for the building of this projected railway from Southampton to Collingwood, Ont., via Owen Sound and Meaford, and from Southampton to Kincardine, via Port Elgin and Tiverton. (Mar., pg. 95.)

**Smoky Valley and Peace River Ry.**—The Alberta Legislature has incorporated a company with this title to build a railway from the junction of Solomon Creek with the Athabasca River, on the Canadian Northern Alberta Ry.'s line northerly and westerly to the junction of Sheep Creek and Smoky River, and then on to Dunvegan. (April, pg. 137.)

**Southern Central Pacific Ry.**—The Dominion Parliament has granted an extension of time for the building of the line authorized to be built from Vancouver via Kootenay Pass and the Old Man River to Hudson Bay, at least 100 miles north of



Fort Churchill, with a branch from Blindman River, Sask., via Dunvegan, to Gardiner's Canal, B.C., and another branch from the Elk River, B.C., to the International Boundary at Milk River.

**Timiskaming and Northern Ontario Ry.**—The Minister of Public Works informed the Ontario Legislature, Mar. 25, that there would be certain capital expenditure made

on the T. and N. O. R. during this fiscal year, but the amount had not been decided upon. (Sept., 1914, pg. 419.)

**Western Dominion Ry.**—The Dominion Parliament has extended the time for the building of the projected railway from Calgary, via the Old Man River valley, Pincher Creek and Cardston, Alberta, to the International Boundary. (April, pg. 137.)

## Traffic Orders by the Board of Railway Commissioners.

### Release Re Carriage of Household Goods.

General Order 136. Mar. 25. Re application of Canadian Freight Association, under section 340 of the Railway Act, for an order approving a new form of release in connection with carriage of household goods, it is ordered:

1. That the said form of release, being a form of special contract limiting the liability of the carrier in respect of the carriage of the undermentioned traffic, be approved as amended by the Board; the said form being in the terms following, viz:

#### "SPECIAL CONTRACT.

.....Railway Company.  
"Limitation of responsibility in connection with the carriage of household goods, furniture and settlers' effects (all second hand).  
Consignee and

Destination	Description of Articles
"In consideration of the.....Railway Co. and its connecting carriers receiving the above mentioned property for carriage from.....station, consigned to.....at.....station, at a lower rate than the said company and its connecting carriers might otherwise lawfully charge and be liable for injury to or loss of the said goods and property, or any of it, the said lower and the higher rates being as provided for in the Canadian Freight Classification, or current special tariffs, I do hereby undertake that no claim in respect of injury to, or loss of, the said property, or any of it, will be made against the said Company and its connections, or any of them, exceeding the amount of \$10 for any one of the packages and its contents, or any one article not enclosed in a package, whether such injury or loss is occasioned by the negligence of the said company, its connections, or any of them, or its or their servants or agents, or any of them, or otherwise howsoever.	

.....Shipper."

2. That all railway companies under the jurisdiction of the Board be directed to discontinue the use of their present forms of release limiting their liability with respect to the carriage of the property referred to in sec. 1 of this Order, and to substitute therefor the form herein prescribed until otherwise ordered by the Board.

3. That the Canadian Freight Classification, also, if necessary, any special tariffs affected by these provisions, be amended so as to conform to this Order.

### Express Classification Storage Batteries Charged With Acid.

General Order 137. Mar. 26. Re application of Express Traffic Association of Canada for approval of a proposed amendment to Express Classification for Canada no. 3, providing a rating for storage batteries charged with acid, and conditions of carriage thereof, the acceptance by the express companies of such batteries being prohibited by the present classification; and on the application of Death & Watson, Ltd., of Toronto, it is ordered that the proposed amendment to the said classification be approved as follows:

"Batteries, storage, to be charged at merchandise rates. If empty, the batteries must be boxed or crated. If charged with acid, the batteries must be placed in a strong wooden box and surrounded and covered by excelsior or other porous material that will not be attacked chemically by the liquid, and in quantity sufficient to absorb and hold all of the liquid contained therein. Batteries must be packed with filling holes up. The outside box should be so constructed, with projecting sides and ends with gable top, that it cannot be placed in any other than an upright position, and cannot be stood on side, end or top. On the outside container must be placed a white label, reading:

"NOTICE: Handle carefully. ACID. Do not load with inflammables protected by yellow labels.....Shipper's name."

### Express Classification Re Moving Picture Films.

General Order 138. Mar. 25. Re application of Express Traffic Association of Canada, for approval of a proposed amendment to Express Classification for Canada no. 3, containing provisions for the proper packing of moving picture films, with the object of safeguarding the travelling public and the companies' employees, it is ordered that the proposed amendment be approved as follows, viz:

"Moving picture films must be packed in tightly closed metal cases enclosed in a strong spark-proof wooden box; or in spark-proof cases made of sheet iron not less than 0.02 in. thick and lined throughout with fibre board at least ¼ in. thick, or some other equivalent insulating material. The cover of these cases must fit tightly, and must lap over the body at least ½ in. on the sides, forming a tight joint. On the outside must be placed a red label, reading: 'MOVING PICTURE FILMS. Must not be loaded or stored near a radiator, stove, or other source of heat.'"

### C. P. R. Freight Tariffs Suspended.

General order 139. April 1. Re application of Canadian Freight Association on behalf of railway companies operating in Eastern Canada, for permission to increase their freight rates on various classes of general merchandise and commodities. Upon a further hearing of the application in Toronto, Mar. 31, in the presence of counsel for and representatives of the Grand Trunk Canadian Pacific, and Canadian Northern Railway Companies, the Dominion Government, the Montreal Board of Trade, the Toronto Board of Trade, the Brotherhood of Locomotive Engineers, the Brotherhood of Firemen and Trainmen, the Dominion and other Cannery Associations, the Montreal Corn Exchange, the Atlantic Sugar Refinery, of St. John, N.B., and the Dominion Millers' Association, it is ordered that the proposed advances in commodity rates shown on pages 4, 5, 6, and the upper part of page 7 of Supplement 26 to C.P.R. Tariff, C.R.C. no. E-2480, be suspended pending a decision by the Board in the said application for a general increase.

### Express Receipts and Labelling of Shipments.

General order 142. April 17. Re complaints made by shippers against section 5, subsection (c) of form of Express Merchandise Receipt; and re labelling "prepaid" and "collect" packages.

It is ordered that sub-section (c) of section 5 of the "Terms and Conditions" endorsed on the Express Merchandise Receipt, be struck out; and that, in lieu thereof, the following new sub-section be inserted:

"For any loss or damage caused by delay, or by injury to, or loss or destruction of the shipment, or any part thereof, from conditions beyond the control of the company, unless such loss or damage is caused by the negligence of the railway company upon whose trains or property the shipment was at the time such loss or damage occurred."

And it is further ordered that express companies shall firmly affix a printed label to every shipment of goods received for carriage, which label shall indicate in conspicuous type whether the charges thereon have been prepaid, or are payable by the

consignee. One such label affixed to any one package or article in a shipment composed of two or more packages or articles may suffice, provided that the label indicates the total number of packages or articles in the shipment. For prepaid shipments the label shall be printed in black on yellow paper. For collect shipments the label shall be printed in black on white paper. Permission of the consignee shall be obtained before the removal of any tag, wrapper, or portion of wrapper from any package or article.

### Green Rough Lumber for Dressing and Reshipment.

23468. April 3. Re C.P.R. Supplement 1 cancelling C.R.C. no. W-1936, applying rates on green rough lumber for dressing and re-shipment. Upon the complaint of the East Kootenay Lumber Co. it is ordered that the said supplement be suspended, pending a hearing by the Board.

## The Death of William Stitt.

William Stitt, General Passenger Agent, Eastern Lines, C.P.R., died suddenly in the office of Capt. J. Walsh, Marine Superintendent, C.P.R., at the Windsor St. general offices, Montreal, Apr. 1. The funeral took place Apr. 3, from his home at Westmount, whence the body was taken by special train to Windsor St. Station, and thence to Mount Royal Cemetery. A large number of C.P.R. and other railway officials attended from various parts of Eastern Canada and the United States, and the ticket offices of the chief railways in the city were closed at 1 o'clock as a mark of respect.

At a meeting of the Eastern Canadian Passenger Association, Apr. 6, the following resolution was passed: "Our esteemed friend and colleague was suddenly taken from us while actively engaged in his daily tasks. His keen perception and discriminating judgment gave him a high place in the deliberations of this body, the sageness of his counsels being enriched with his wealth of kindly humor, therefore be it resolved, that the members of this association, bound by ties of a common and irreparable loss, record their sense of deprivation, and express to his sorrowing family heartfelt condolence and sincerest sympathy. Wise and kindly, frank, but charitable, his life was gentle, and the elements so mixed in him that nature might stand up and say to all the world, this was a man."

He was born in Kirkcudbrightshire, Scotland, Aug. 3, 1855, and entered railway service with the Caledonian Ry. there, and was subsequently with the Glasgow and West of Ireland Steam Packet Co. He came to Canada in 1888, and entered C.P.R. service in the Passenger Department, Winnipeg, becoming chief clerk, and in 1891, Assistant General Passenger Agent there. In 1901 he went to Australia to represent the C.P.R. in connection with the Canadian-Australian Steamship Line, of which he was General Passenger Agent, with office at Sydney, N.S.W. He was appointed General Passenger Agent, Eastern Lines, C.P.R., in 1907.

**Buffalo Freight Service.**—The International Ry. of Buffalo, N.Y., has inaugurated a new freight service in order to meet the requirements of shippers. The company places a freight car at the Erie Rd. station each day which receives the package freight for all points along its lines. A clerk is in charge of the car from 7.30 a.m. to 4.40 p.m., after which the car is moved to the uptown freight station. Here the freight is then placed on the first car bound for that particular point to which the freight is consigned.



## Mainly About Railway People.

**H. B. Walkem**, Resident Engineer, C.P.R., Nelson, B.C., has been given three months leave of absence to visit California.

**M. L. Duffy**, E. W. Jones, H. Prynne and D. B. Watson, of the C.P.R. London, Eng., staff, have received commissions in the British Army.

**Sir Thomas Shaughnessy**, President, C.P.R., has been elected an honorary member of the Institute of Civil Engineers, London, Eng.

**J. L. Englehart**, Chairman, Timiskaming and Northern Ontario Ry. Commission, has had his remuneration increased by the Ontario Legislature, from \$5,000 to \$7,500 a year.

**Sir Thomas Shaughnessy**, President, C.P.R., left Montreal, April 8, with Lady and Miss Shaughnessy, for San Francisco and other California points, intending to return via Victoria and Vancouver early in May.

**J. E. Dalrymple**, Vice President, G.T.R., and G.T. Pacific Ry., has been appointed an honorary colonel in the transportation branch of the Militia, succeeding the late Wm. Wainwright.

**G. W. Lee**, one of the commissioners operating the Timiskaming and Northern Ontario Ry. on behalf of the Ontario Government, has been authorized to act and draw salary as General Agent, T. & N.O.R., in addition to acting as a commissioner.

**Sir George Gibb**, one of the most prominent railway men in Great Britain, has been appointed by the British Government, to deal with all matters pertaining to the purchase of materials for war purposes, with a view to minimizing the possibility of graft.

**C. L. Conacher**, who visited Canada last summer and came in contact with a number of transportation officials, has been serving as a railway transport officer on the War Office staff in London since October, with the rank of captain.

**George W. Yates**, Minister's Secretary, Railways & Canals Department, Ottawa, the death of whose father was announced in our April issue as having occurred at London, Ont., Mar. 7, suffered a second bereavement by the death of his mother, Mar. 28.

**Thos. Jackson**, who died at Clinton, Ont., April 8, aged 84, was the father of Wm. Jackson, town ticket agent, C.P.R., there, and formerly President, Canadian Ticket Agents' Association, of which he has been one of the most active members for many years.

**H. W. Nanton**, a partner in Osler, Hammond & Nanton, Winnipeg, who died there April 18, was a brother of A. M. Nanton, director, C.P.R. He started his career in banking service and was afterwards on the staff of the old Ontario & Quebec Railway before going to the west.

**D. Henion**, Locomotive Foreman, Canadian Northern Ry., Atikokan, Ont., was reported to have been arrested, Mar. 26, on a charge, not specified, but presumed to be some breach of war regulations. He was born in the United States, but has lived in Canada for about 12 years.

**Timothy Mullins**, who has been appointed City Passenger Agent, C.P.R., Ottawa, Ont., was born in 1878, and entered C.P.R. service, Mar. 16, 1904, and has been from 1907 to 1913, city solicitor for passenger business; 1913 to Feb. 28, 1915, City Passenger Agent, all in Toronto.

**W. P. Hutchinson** and **B. A. Bourgeois** having received the highest number of votes, have been declared by F. P. Gutelius, Chairman of the Intercolonial and Prince Edward Island Railway Employees' Provi-

dent Fund, as the two members elected by the employes for the year ending Mar. 31, 1916.

**A. L. Sauve**, who has been appointed City Ticket Agent, C.P.R., Ottawa, Ont., was born in 1889, and entered C.P.R. service in 1906, since when he has occupied positions in Ottawa, Montreal, Quebec, and latterly as City Ticket Agent at Detroit, Mich. He was also, for one year, ticket agent on board the C.P.R. s.s. Empress of Britain.

**W. J. McDonald**, who died at St. Petersburg, Florida, Apr. 5, was for many years a prominent railway contractor in Canada, having built portions of the National Transcontinental Ry. in Quebec and New Brunswick, and near Sudbury, Ont., as well as carrying out a contract on the Quebec and Saguenay Ry.

**Alex. Mackenzie**, elder brother of Sir Wm. Mackenzie, and Mrs. Mackenzie celebrated the 50th anniversary of their wedding, Mar. 28, in Toronto. Among the sons present



**H. H. Vaughan**, M. Can. Soc. C.E.  
Consulting Engineer, Canadian Pacific Railway.

were **J. S. Mackenzie**, Purchasing Agent, Winnipeg Electric Ry., and **W. E. Mackenzie**, Locomotive Foreman, Canadian Northern Ry., Vermillion, Alta.

**J. E. Muhlfeld**, who was a master mechanic on the G.T.R. from Feb. 1899 to Sept. 1901, and Superintendent of Machinery and Rolling Stock, Canadian Government Railways, Moncton, N.B., from Sept. 1901 to Oct. 1902, is President of the Locomotive Pulverized Fuel Co. which has been organized recently in New York.

**F. D. Underwood**, President, Erie Rd., underwent a minor operation at the New York Hospital, New York, April 1, which was very successful and we were advised April 15 that he expected to be back at his office a few days thereafter. The press report that he was operated upon for appendicitis was incorrect.

**V. F. Aiken**, referred to as a former passenger and telegraph agent of the C.P.R. at Rogers Pass, was arrested at Vancouver, B.C., Apr. 5, as the last of eight men who have been wanted since Nov. 1913, on charges of conspiracy to defraud the C.P.R.

by means of padded pay rolls. The amount stated to have been embezzled is \$11,000.

**Albert Craig**, who has been appointed City Passenger Agent, C.P.R., Hamilton, Ont., was born there, June 5, 1884, and entered railway service, Sept. 1900, since when he has been, to Dec. 1904, ticket clerk, C.P.R. and Toronto, Hamilton and Buffalo Ry., Hamilton, Ont.; Dec. 1904 to May 1, 1915, Ticket Agent, same road, Hamilton.

**John Bryden**, who died at Victoria, B.C., Mar. 25, was for a number of years Manager of the Dunsmuir Colliery interests at Wellington, Vancouver Island. He married Miss E. H. Dunsmuir (sister of James Dunsmuir, director C.P.R.), who died in 1891. He was a relative of the only survivor of the massacre of the British troops in the Khyber Pass, Afghanistan, in about 1849.

**A. C. Fraser**, whose appointment as Superintendent of Telegraphs, Eastern Division, C. P. R., Montreal, was announced in our last issue, was born at McLellan's Brook, N.S., Feb. 11, 1870, and entered telegraph service in 1886, with the Western Union Telegraph Co., at Moncton, N.B. Since he entered C.P.R. telegraph service he has been operator, traffic chief, wire chief, agent, and inspector.

**W. McIntosh**, a former Superintendent of Motive Power, Central Rd. of New Jersey, Jersey City, N.J., who died at Plainfield, N.J., recently, was born at Franklin, Que., Aug. 20, 1849, and spent his railway career entirely in the U. S. He was a prominent member of the American Railway Master Mechanics' Association, and in 1908 served as President. He was also a member of the American Society of Mechanical Engineers.

**James Markey**, Master Mechanic, Ontario Lines, G.T.R., Toronto, died at his home there, Apr. 22, aged 54, after several weeks illness. He had been in G.T.R. service for about 25 years, rising from the position of locomotive driver. He was born in Ireland, and went to New York at an early age, coming to Canada later, and entering G.T.R. service at Stratford, Ont., subsequently serving at Belleville, Brockville and Allandale.

**H. T. Morgan**, who died at Bournemouth, Eng., recently, aged 51, was a son of the late F. Grundy, Vice President of the Quebec Central Ry., Sherbrooke, Que., and brother of G. G. Grundy, General Manager, Temiscouata Ry., Riviere du Loup, Que., and of E. O. Grundy, General Passenger Agent, Quebec Central Ry., Sherbrooke, Que. He had been engaged in railway service under the Egyptian Government, and changed his name by deed poll at the time of his marriage several years ago.

**H. J. Lillie**, whose appointment as Superintendent of Telegraphs, Ontario Division, C.P.R., Toronto, was mentioned in our last issue, was born there, Nov. 16, 1867, and entered telegraph service in July 1881, as messenger, Great North Western Telegraph Co., at Toronto, and remained with that company as an operator until Nov. 1886, when he transferred to the C.P.R. telegraph service at Toronto, occupying successively the positions of assistant traffic chief, wire chief, and latterly chief operator there.

**George Duncan**, City Passenger Agent, C. P. R., Ottawa, Ont., died suddenly, Apr. 6, while in the Government immigration offices. He was born in Montreal, Nov. 23, 1860, and had been in C.P.R. service for about 35 years, prior to which he had been with the G.T.R. Among the positions he occupied with the C.P.R., were those of chief clerk to the General Manager, Traveling Passenger Agent, City Passenger Agent, Sherbrooke, Que., and at Quebec, Que., and since 1900, City Passenger and Ticket Agent, Ottawa, Ont.



**F. W. Taylor**, who is well known as the originator of modern scientific management, which has been adopted in the chief railway shops on this continent, died suddenly in Philadelphia, from pneumonia, recently. He received a personal gold medal at the Paris Exposition of 1900 for an improved process of treating modern high speed steel, and also the Elliott Cresson medal of the Franklin Institute. He was a member of the American Society of Mechanical Engineers, of which he was President in 1905-06. He was also author of several books and articles dealing with shop management.

**Frederick R. Perry**, who has been appointed General Agent, Passenger Department, C.P.R., New York, was born at Hopkinton, Mass., Aug. 15, 1876, and entered railway service July 1, 1895, since when he has been, to Apr. 30, 1896, stenographer, G.T.R., Boston, Mass.; May 1, 1896 to Mar. 31, 1900, stenographer and ticket clerk, C.P.R., Boston, Mass.; Apr. 1, 1900 to Dec. 1, 1904, City Passenger and Ticket Agent, C.P.R., Boston, Mass.; Dec. 1, 1904 to May 31, 1906, District Passenger Agent, C.P.R., St. John, N.B.; June 1, 1906 to Mar. 31, 1915, General Agent, Passenger Department, C. P. R., Boston, Mass.

**Charles Frederick Black**, who has been appointed Attorney, Central Vermont Ry., was born at Burlington, Vt., Mar. 5, 1884, and educated there, graduating from the High School in June, 1902. He attended the University of Vermont and graduated in June, 1906, with the degree of Ph.B., and obtained the degree of LL.B., at the George Washington University, Washington, D.C., in June, 1910. He was admitted to practice in the District of Columbia in Oct., 1910, and in Vermont in Oct., 1912. He was City Prosecuting Officer, Burlington, Vt., 1913 to 1915, and a member of the Vermont General Assembly for 1915.

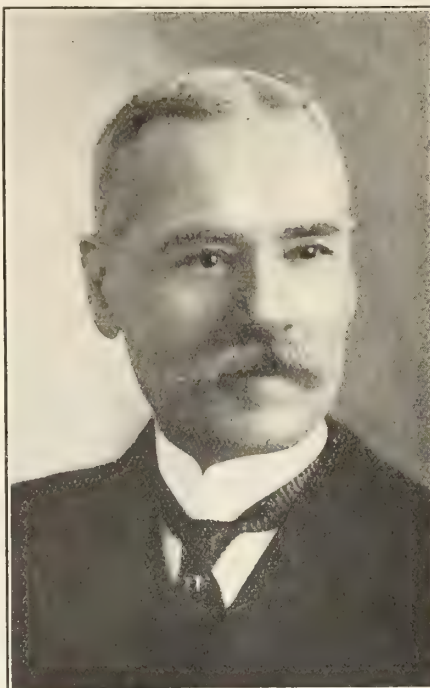
**William Fulton**, who has been appointed Assistant District Passenger Agent, C.P.R., Toronto, was born at Ballinderry, near Belfast, Ireland, Nov. 13, 1870, and entered C. P.R. service, Jan. 1891, since when he has been, to Jan. 1895, clerk in different positions, Toronto; Jan. 1895 to June 1900, City Agent, C.P.R., Dominion Express Co., and C.P.R. Telegraphs, Galt, Ont.; June 1900 to Feb. 28, 1915, City Passenger and Ticket Agent, London, Ont. He was entertained to dinner by a number of business men in London, Ont., Apr. 23, when he was presented with a cabinet of silver.

**James Kent**, whose retirement from the position of Manager, C.P.R. Telegraphs, was announced in our last issue, was born at Montreal, Jan. 15, 1854, and commenced his telegraph service as messenger, Montreal Telegraph Co. He occupied various positions, and in 1886, when he was chief operator, Great North Western Telegraph Co., he transferred to the then recently inaugurated C.P.R. telegraph system, as chief operator at Montreal. In 1890 he was appointed Superintendent of Telegraphs, Eastern Division from Louisburg, N.S., to Fort William, Ont., and in 1899 succeeded C. R. Hosmer, as Manager of Telegraphs.

**R. J. Collins**, who was recently appointed Chief Dispatcher, District 4, Alberta Division, C.P.R., Edmonton, was born at Winnipeg, Apr. 30, 1883, and entered C.P.R. service, Oct. 4, 1898, since when he has been, to Apr. 1901, messenger, assistant agent and stationary fireman, Broadview, Sask.; Apr. 8, 1901 to Feb. 6, 1902, assistant agent, Broadview, Sask.; Feb. 6, 1902 to Mar. 23, 1902, agent, Caron, Sask.; Mar. 23, 1902 to Dec. 1904, night operator, day operator and agent, Broadview, Sask.; Dec. 1904 to May 1905, operator, Moose Jaw, Sask.; May 1905 to June 1912, dispatcher, Moose Jaw, Sask., Cranbrook, B.C., and Calgary, Alta.; June 1912 to Apr. 1915, Chief Dispatcher, Re-

gina, Sask.; Saskatoon, Sask.; Assiniboia, Sask., and Edmonton, Alta.

**E. F. L. Sturdee**, who has been appointed General Agent, Passenger Department, C. P.R., Boston, Mass., was born at St. John, N.B., Mar. 29, 1876, and entered C.P.R. service Dec. 1893, since when he has been, to July 1894, office boy, Moncton, N.B.; July 1894 to Aug. 1897, clerk and stenographer,



P. 414 The Late Lacey R. Johnson.



P. 415. F. W. Cooper, A.M. Can. Soc. C.E., Acting Superintendent, District 1, Eastern Division, Canadian Pacific Railway.

Assistant General Passenger Agent's office, St. John, N.B.; Aug. 1897 to June 1902, stenographer, rate and excursion clerk, Ontario Division, Assistant General Passenger Agent's office, Toronto; June 1902 to Dec. 1910, excursion clerk, General Passenger Department, Eastern Lines, Montreal; Dec. 1910 to Dec. 1, 1913, chief clerk to General Passenger Agent, Eastern Lines, Montreal;

Dec. 1, 1913 to Apr. 1915, Assistant District Passenger Agent, Toronto.

**W. Marshall**, whose appointment as Assistant Manager of Telegraphs, Western Lines, C.P.R., Winnipeg, was announced in our last issue, was born at Garden Island, Ont., May 18, 1859, and entered telegraph service in 1876, in the stores department, Dominion Telegraph Co., Toronto, and was subsequently an operator and line man at St. Catharines, Ont. From 1878 to 1880, he was foreman of line construction, Canadian Mutual Telegraph Co.; 1880 to 1886, with the Western Union Telegraph Co., Buffalo, N. Y. He entered C.P.R. telegraph service in 1886, since when he was, to 1906, Inspector, Toronto; 1906 to Aug. 1909, Superintendent of Telegraph Construction, Toronto; Aug. 1909 to March 1915, Superintendent of Telegraphs, Toronto.

**Andrew James Taylor**, who died at Ocean Park, California, Apr. 19, where he had been for some months on account of ill health, was born at Ottawa, Ont., June 24, 1857, and entered Chicago, Milwaukee and St. Paul Ry. service in 1879, since when he has been, to 1881, clerk in General Canadian Agent's office, Toronto; 1881 to 1883, Traveling Passenger and Freight Agent; 1883 to 1885, Travelling Freight Agent; 1885 to 1897, Canadian Passenger Agent; and from 1897, Canadian Freight and Passenger Agent, at Toronto. He was well known throughout Ontario, and was connected with many of the athletic organizations in Toronto and neighborhood. The funeral took place at Bowmanville, Ont., Apr. 24. His brother, J. G. Taylor, is General Superintendent, Saskatchewan Division, C.P.R., Moose Jaw.

**Frank W. Cooper, A.M. Can. Soc. C.E.**, who has been appointed acting Superintendent, District 1, Eastern Division, Farnham, Que., was born at London, Ont., Feb. 16, 1880, and entered railway service in 1901, since when he has been, to 1903, draughtsman, Maintenance of Ways Department, leveller on preliminary location and construction, Algoma Central and Hudson Bay Ry., Sault Ste. Marie, Ont.; June 1903 to Nov. 1905, transit man and Assistant Engineer, C.P.R., London and Toronto; Nov. 1905 to Nov. 1911, Resident Engineer, C.P.R., London and Toronto; Nov. 1911 to Apr. 1912, Resident Engineer, C.P.R., Montreal; Apr. to Nov. 1912, Assistant Engineer, Chief Engineer's Office, C.P.R., Montreal; Nov. 1912 to Feb. 1915, Division Engineer Eastern Division, C. P.R., Montreal.

**William Bristow McNiece**, whose appointment as Car Foreman, G.T. Pacific Ry., McBride, B.C., was announced in a recent issue, was born in County Antrim, Ireland, Sept. 13, 1880, and entered railway service Sept. 1900, since when he has been, to Jan. 1901, shunter, Caledonian Ry., Airdrie, Scotland; Jan. 1901 to May 1903, brakeman, same road, Greenock; May 1903 to Mar. 1907, brakeman, same road, Glasgow; Apr. to Sept. 1907, car repairer, G.T. Pacific Ry., Portage la Prairie, Man.; Sept. 1907 to Apr. 1908, brakeman, Chicago and Northwestern Ry., Janesville, Wisconsin; May to Aug. 1908, car repairer, G.T. Pacific Ry., Portage la Prairie, Man.; Aug. 1908 to Nov. 1912, Car Foreman, same road, Fort William, Ont.; Nov. 1912 to Aug. 1914, Car Foreman, same road, Jasper, Alta.

**C. W. Van Buren**, who has been appointed General Master Car Builder, C.P.R., Montreal, entered railway service in March 1889, since when he has been, to Nov. 1891, carpenter, New York Central shops, West Albany, N.Y.; Nov. 1891 to Sept. 1, 1893, assistant foreman; Sept. 1, 1893 to Sept. 1, 1896, in charge of Car Department work, Adirondack Division, same road, Herkimer, N.Y.; Sept. 1, 1896 to July 16, 1905, Car Foreman, Adirondack Division, and Mohawk Division, New York Central and West



Shore Rds.; July 16, 1905 to July 1, 1906, General Car Inspector, Eastern Lines, C.P.R., Montreal; July 1, 1906 to July 1, 1909, Divisional Car Foreman, Eastern Division, C.P.R., Montreal; July 1, 1909 to 1911, Master Car Builder, Eastern Lines, C.P.R., Montreal, when he resigned from C.P.R. service.

**D. T. Main**, who has been appointed Superintendent of Motive Power and Car Department, C.P.R., Montreal, was born at Kirkintilloch, Scotland, in 1878, and came to Canada in 1903, when he entered Mackenzie, Mann and Co.'s service as draughtsman, transferring to C.P.R. service in 1904, since when he has been, to 1907, draughtsman; 1907 to Mar. 1908, Locomotive Foreman, Minnedosa, Man.; Mar. 1908 to Mar. 1910, Locomotive Foreman, Cranbrook, B. C.; Mar. 1910 to Jan. 1912, District Master Mechanic, District 1, British Columbia Division, Nelson; Jan. 1912 to June 30, 1913, Master Mechanic, Saskatchewan Division, Moose Jaw; June 30, 1913 to Apr. 15, 1915, Master Mechanic, British Columbia Division, Vancouver; Apr. 15 to Apr. 20, 1915, Master Mechanic, Ontario Division, Toronto.

**J. McMillan**, whose appointment as Manager of Telegraphs, C.P.R., Montreal, was announced in our last issue, was born at Liverpool, Eng., Nov. 2, 1866. He came to Canada, June 1883 and was for some time working on C.P.R. construction. In 1885 he served as foreman of telegraph construction and of the Government military telegraph lines, and subsequently returned to railway construction. In 1888 he was general foreman of construction, C.P.R., at Winnipeg. He became a telegraph operator in 1895 with the C.P.R. at Winnipeg, and in 1896 was transferred to the Mountain Division as circuit manager, repeater chief and telegraph agent. From 1902 to 1906 he was Inspector of Telegraphs, Central Division, C.P.R., Winnipeg; 1906 to Apr. 1907, Assistant Superintendent of Telegraphs, C.P.R., and Apr. 1907 to Jan. 1912, Superintendent of Telegraphs, at Calgary, Alta.; Jan. 1912 to July 1, 1913, Superintendent of Telegraphs, C.P.R., Winnipeg, and July 1, 1913 to Mar. 1915, General Superintendent of Telegraphs, C.P.R., Winnipeg.

**Henry Hague Vaughan**, who has retired from the position of Assistant to the Vice President, C.P.R., and has been appointed Consulting Engineer, was born at Forest Hill, Essex, Eng., Dec. 26, 1868, and educated at King's College, London, Eng. He served an apprenticeship with Nasmith, Wilson and Co., Patricroft, Manchester, Eng., going to the U.S. in 1891. He was engaged with various companies as machinist, draughtsman and assistant engineer of tests, and mechanical engineer, including the Great Northern Ry., Philadelphia and Reading Ry., and the Queen and Crescent Route, and after a period of service with a supply house, was appointed Assistant Superintendent of Motive Power, Lake Shore and Michigan Southern Ry., Mar., 1902, remaining until Feb., 1904, when he was appointed Superintendent of Motive Power, C.P.R., which position he held until his appointment as Assistant to the Vice President, C.P.R., Dec., 1906. He is President of the Engineers' Club of Montreal, and has been a member of the Canadian Society of Civil Engineers since 1906, a member of the council since 1910, and was elected a Vice President in 1912.

**Lacey R. Johnson**, M.Can.Soc.C.E., whose appointment as General Welfare Agent, C.P.R., Montreal, was announced in our last issue, died Apr. 17, from peritonitis, after a short illness. He was born at Abingdon, Berks, England, June 22, 1855. He entered railway service as an apprentice at the

Great Western Ry. works at Swindon, Wilts., June 1, 1870, and was a mechanic and Foreman of Mechanics at Woolwich Arsenal, Jan. to Aug., 1876, and fitter and erector, Sept., 1876, to Nov., 1878; Manager, Davis and Sons' engineering works,



**W. Marshall**,  
Assistant Manager of Telegraphs, Western  
Lines, Canadian Pacific Railway.



**J. F. Richardson**,  
Superintendent of Telegraphs, Saskatchewan  
Division, Canadian Pacific Railway.

London and Abingdon, Nov., 1878, to Aug., 1879. In Sept., 1879, he went to India as draughtsman on the Scinde, Punjab and Delhi Ry., and was subsequently foreman of machine and erecting shops there. He left India on account of health in Mar. 1882,

and entered G.T.R. service at Montreal as draughtsman, June, 1882, and joined the C.P.R. in Nov., 1882, after which he was, to Nov., 1885, General Foreman, Carleton Jct., Ont.; Nov., 1885, to May, 1886, Assistant Master Mechanic, Eastern Division, Chapleau, Ont.; May, 1886, to Apr., 1901, Master Mechanic, Pacific Division, Vancouver, B.C.; and from the commencement of the Transpacific service his jurisdiction was extended over the engineering department of the vessels, during which time he spent three winters in Hong Kong, China, superintending alterations and repairs to the company's vessels; Apr. to Sept., 1901, on the purchase of the Canadian Pacific Navigation Co. by the C.P.R., he was Superintending Engineer of the combined fleets, which position was severed from the locomotive and car department; Sept. 1, 1901, to July 1, 1912, Assistant Superintendent of Motive Power, C.P.R., Montreal; July 1, 1912, to Mar., 1915, General Superintendent, Angus Shops District, C.P.R., Montreal. He was Lieutenant-Colonel, Commanding the Montreal Heavy Brigade of Artillery and was given a military funeral.

**John Franklin Richardson**, whose appointment as Superintendent of Telegraphs, Saskatchewan Division, C.P.R., Moose Jaw, was announced in our last issue, was born at Granby, Que., Aug. 23, 1860, and was educated in Wisconsin, and Waterloo, Que. He entered railway and telegraph service in 1876, since when he has been, to 1879, assistant agent and telegraph operator, Central Vermont Ry., Waterloo, Que.; 1879 to 1881, assistant in offices of Montreal Telegraph Co., and of Canadian, National, and United States Express Cos., St. John's, Que.; 1881 to 1883, telegraph operator, Great North Western Telegraph Co., Montreal; he entered C.P.R. telegraph service in 1883, since when he has been telegraph operator, Inspector and Assistant Electrician, Montreal; Superintendent of Construction, St. John, N.B.; Superintendent at Montreal, and from Jan. 1912, at Vancouver, B.C. During the time he was Superintendent of Telegraph Construction at St. John, N.B., he built all the C.P.R. telegraph lines in the Maritime Provinces, including the laying of the submarine cables to Cape Breton Island. In 1897 he made repairs to the submarine cable between Vancouver and Victoria, B.C., and in the same year, he was lent to the Dominion Government to explore different routes to the Yukon and to give an estimate for the building of a telegraph line to Dawson. His choice of route and estimate were accepted, and his services were utilized to build the line from Bennett, B.C., to Dawson, Yukon. This line was completed Sept. 28, 1899, five weeks earlier than the time agreed upon, and during the process of construction, the remarkable average of five miles of completed line a day was made. In 1901 he represented the Telegraph Department on the train conveying the present King and Queen, then Duke and Duchess of Cornwall and York, across the Dominion, and acted in a similar capacity in 1906 from Winnipeg east, on the train conveying Prince Arthur of Connaught home from Japan. He has invented several electrical devices, some of which have been adopted by the C.P.R. and other railway and telegraph companies in Canada and the U.S. One of the most important of these in general use is the device to permit the operating of an emergency telephone from trains, in cases of breakdown. He is a member of the Old Time Telegraphers and Historical Association, and of the Association of Railway Telegraph Superintendents.

**The C.P.R. Mountain Hotels** will open as follows: Banff Springs, May 1; Lake Louise, June 1; Balfour, June 1; Field, June 15.



## Canadian Pacific Railway Construction. Betterments, Etc.

**Legislation.** The Dominion Parliament has passed a number of acts granting the C.P.R. and several of its subsidiary companies extensions of time for the building of lines. These include lines in the west covering about a score of branches in Manitoba, Saskatchewan and Alberta, upon most of which part of the lines are built and in operation; the Manitoba and North Western Ry. extensions in Manitoba and Saskatchewan; the British Columbia Southern Ry. extension from Michel to Kananaskis, B.C.; and the South Ontario Pacific Ry. from Hamilton to Niagara Falls, Ont. The general C.P.R. act also covers a proposed line from Bolton Jct. or Palgrave, on the Toronto-Sudbury line to Campbellville on the Toronto-Windsor line.

**Eastern Division.**—The new electrically operated bridge across the Lachine canal, Montreal, was officially opened for traffic, April 17. It is a double track bridge and is the last link in the second track work in the vicinity of Montreal. Work was started on the substructure Dec. 1, 1914, and completed Feb. 1, and the steel work was at once completed. Traffic was not delayed during the construction of the bridge.

**Western Lines Second Track Construction.**—D. C. Coleman, Assistant General Manager, Western Lines, is reported to have said in a recent interview that no further second track construction is to be undertaken on the Western Lines at present.

**Alberta Division.**—A press report states that arrangements are being made for the extension of the Alberta Central Ry., at present built from Red Deer to Rocky Mountain House, 60 miles, in the direction of the Brazeau River coal fields, but D. C. Coleman, Assistant General Manager, Western Lines, is reported to have said in a recent interview that nothing definite had been arranged about the matter. The Dominion Parliament has granted an extension of time for the building of this line.

The Board of Railway Commissioners has approved location plans for the completion of the Weyburn-Lethbridge line, covering the mileage from the present end of steel, at the Saskatchewan-Alberta boundary, to the end of the 25 miles of grading completed easterly from Foremost, the present easterly end of the steel. This gap between the westerly and the easterly track ends is less than 70 miles, on which about 45 miles of grading has yet to be done. Local press reports state that grading will be done this year, even if steel is not laid.

**Rogers Pass Tunnel Construction.**—A press report dated April 9 states that practically three miles of the pioneer tunnel had been driven, of which well on to two miles was from the eastern portal, and something over a mile from the western portal. The main tunnel had been driven for 4,580 ft. from the eastern portal, and for 4,439 ft. from the western portal, and about 3,090 ft. of tunnel had been lined and completed. The contract calls for the completion of the tunnel by the end of 1916, but such rapid progress has been made that it is expected to have it ready about six months ahead of the time limit. We have been officially advised that nothing has yet been decided as to the system of ventilation to be adopted for the tunnel.

**British Columbia Division.**—D. C. Coleman, Assistant General Manager C.P.R. Western Lines, is reported to have said in a recent interview that arrangements were being completed for operating the Kettle Valley Lines from Midway to Merritt, B.C., as part of the C.P.R. system, the connec-

tion with the main transcontinental line being made by Spence's Bridge, over the C.P. R. Nicola branch from Merritt. When the K.V. Line is completed through to Hope, an additional connection with the transcontinental line will be provided. (April, pg. 135.)

## Railway Finance, Meetings, Etc.

**Boston and Maine Rd.**—An act providing for the reorganization of the B. and M. R., was signed by the Governor of Maine, April 2, to become effective on the passing of similar legislation in the other States in which the company operates. The reorganization bill was defeated in the Vermont House of Representatives by a large majority, April 2.

**Canadian Northern Ry.**—The Dominion Parliament at its recent session passed legislation providing that the issue of Dominion notes, and the advances made in pursuance of various orders-in-Council, and all things done under the provisions of such orders be ratified. The advances made to the C.N.R. under the orders-in-Council amount to \$10,000,000 against a pledge made by the company of the guaranteed securities issued under the provisions of the C.N.R. Guarantee Act, 1914. The sums advanced have been placed to the credit of the Minister of Finance to be paid out according to the terms of the trust deed.

An agreement made Mar. 19, between the C.N.R. and the Guaranty Trust Co., New York, qualifying the agreement of Aug. 1, 1910, between the same parties, has been filed with the Secretary of State at Ottawa.

A trust mortgage deed dated July 30, 1914, made by the Mount Royal Tunnel and Terminal Co. (the C.N.R., terminal company in Montreal) to the British Empire Trust Co., securing first mortgage debenture stock and bonds has been filed with the Secretary of State at Ottawa.

**Grand Trunk Pacific Ry.**—The Dominion Parliament, in its recent session, enacted legislation providing that the issue of Dominion notes, and the advances made in pursuance of various orders-in-Council, and all things done under the provisions of such orders be ratified. The advances made to the G.T.P.R. amount to \$6,000,000, against a pledge of the guaranteed securities of the company. The sums advanced have been placed to the credit of the Minister of Finance to be paid out according to the terms of the trust deed.

**Grand Trunk Ry.**—The Dominion Parliament has authorized the company to assist financially any company the stock of which it holds or controls, out of the proceeds of any class of stock heretofore or hereafter issued. The approval of the shareholders must be first obtained to the use of the funds in this way.

**Intercolonial Ry.**—Senator Loughheed informed the Senate, Mar. 30, that the receipts of the I.R.C. for the 10 months ended Jan. 31, were \$9,677,547.77 and disbursements, \$9,760,638.11. In the House of Commons the Minister of Railways gave the additional information that within the same period the revenue had increased by over \$1,500,000, while the operating expenses had decreased by over \$200,000.

The House of Commons has voted \$13,000,000 on account of working expenses for the current financial year.

On account of the following branch lines there have been provided in the main and supplementary estimates on account of construction during the current financial year as follows: International Ry. of New Brunswick, \$85,000 and \$100,000; New Brunswick and Prince Edward Island Ry., \$65,000 and \$50,000; St. John and Quebec Ry., \$60,000 and \$15,000.

**National Transcontinental Ry.**—The House of Commons voted \$200,000 on account of the working expenses of the section of the line from Moncton to Levis, in the main estimates, and an additional \$30,000 in the supplementary estimates.

**Pere Marquette Rd.**—A petition asking for an order for the sale of the company's railway and other property is under consideration of the Federal Court at Detroit, Mich. The petition states that \$1,503,490 of interest on underlying bonds is due, and that there is no prospect of it being paid. The company owns the Lake Erie and Detroit River Ry. in Canada, which, however, is apparently not affected by the proceedings.

**Prince Edward Island Ry.**—In the main estimates at the recent parliamentary session \$650,000 was provided, and in the supplementary estimates \$50,000 was provided for working expenses for the current financial year.

**Shuswap and Okanagan Ry.**—A meeting of shareholders has been called to be held at Montreal, May 3, to consider whether it is expedient to cancel the present lease to the C.P.R. and to enter into a new lease of the company's railway to that company, and if so to approve of the terms, conditions and forms of the new lease. H. C. Oswald is Secretary.

**Temiscouata Ry.**—Net earnings for January, \$2,969 against \$4,026 for Jan., 1914.

**Toronto, Hamilton and Buffalo Ry.**—The Dominion Parliament has confirmed the agreement for the amalgamation of the Erie and Ontario Ry. with the T. H. and B. Ry., and fixing the bonding powers of the amalgamated company at \$15,000,000.

**White Pass and Yukon Route.**—Gross earnings from Jan. 1 to Feb. 21, \$12,263, against \$24,400 for same period 1914.

## Grand Trunk Railway Betterments, Construction, Etc.

**Boston Terminals.**—G.T.R. officials in Montreal state that the company is not definitely interested in the application recently made to the Massachusetts Legislature by J. W. Ayres, Somerville, Mass., for dock facilities at Boston, Mass. The petition to the Legislature is reported to have stated that the movement was being made in the interests of the Southern New England Ry., a subsidiary of the Central Vermont Ry., which itself is controlled by the G.T.R., and a press report stated that the solicitors acting in the matter are associated with G.T.R. interests in the State. The site mentioned at the water front adjoins the New York New Haven and Hartford Rd. freight yards.

**Peterborough, Ont.**—G.T.R. engineers met Peterborough City Council's public utilities committee, Mar. 30, and discussed projected improvements at that place. (April, pg. 134.)

## Canadian Freight Association Committees.

At a meeting in Montreal April 15 the following committees were elected:

**ADVISORY.**—G. H. Shaw, C. E. Dewey, W. M. Kirkpatrick and J. H. Meglemery.

**EXECUTIVE.**—W. M. Kirkpatrick, F. F. Backus, G. Tombs and H. C. Martin.

**CLASSIFICATION.**—W. M. Kirkpatrick, G. Tombs, F. J. Watson, E. N. Todd, L. Macdonald, H. E. Macdonnell, G. T. Pettigrew, M. H. Brown, R. E. Perry, J. Edward.

**FREIGHT INSPECTION.**—R. W. Long, F. A. Shaw, M. H. Brown, R. W. Youngs, R. J. S. Weatherston, J. Edward, G. H. Clark, W. B. Bamford, W. S. Elliot, G. C. Martin.



## Transportation Appointments Throughout Canada.

**Algoma Central & Hudson Bay Ry.**—T. J. KENNEDY, President, having returned from Europe, has qualified as a co-receiver with Vivian Harcourt, who acted as sole receiver beginning Feb. 20.

R. BARBER has been appointed Treasurer, vice Jas. Hawson. Office, Sault Ste. Marie, Ont.

**Canada Steamship Lines, Ltd.**—M. P. CONNOLLY, General Agent, Quebec, Que., will in future deal with passenger matters only.

H. M. DUBOIS, heretofore Travelling Freight Agent, has been appointed District Freight Agent, Quebec, Que.

W. F. CLONEY, heretofore General Agent, Buffalo, N.Y., has been appointed General Agent, Rochester, N.Y.

J. V. FOY, heretofore General Agent, Chicago, Ill., has been appointed General Agent, Buffalo, N.Y., vice W. F. Cloney, transferred.

H. W. CRAWFORD, heretofore General Agent, Rochester, N.Y., has been appointed General Agent, Chicago, Ill., vice J. V. Foy, transferred.

**Canadian Northern Ry.**—T. S. LOWE, heretofore Master Mechanic, Limoilou, Que., has been appointed General Foreman there, in addition to performing the duties of Road Foreman of Locomotives, Lake St. John Division.

W. HOPE, heretofore Erecting Shop Foreman, Joliette, Que., has been appointed Foreman, Limoilou, Que.

T. LATTE, heretofore Locomotive Foreman, Limoilou, Que., has resigned.

**Canadian Pacific Ry.**—H. H. VAUGHAN, Assistant to Vice President, Montreal, has, at his own request, been released from the immediate supervision of the construction and maintenance of locomotives and cars, in order that he may devote his attention to important contract engagements that he has become interested in, (viz., the manufacture of shells, cartridge cases, etc., for the British Government, by the Montreal Ammunition Co., Ltd., of which he is President). He is being retained by the C.P.R. as Consulting Engineer. It is not the intention to fill the position of Assistant to the Vice President, at present.

W. E. WOODHOUSE, heretofore Superintendent Motive Power and Car Department, Montreal, has been appointed Chief Mechanical Engineer. Office, Montreal.

D. T. MAIN, heretofore Master Mechanic, British Columbia Division, Vancouver, who, on Apr. 15, was appointed Master Mechanic, Ontario Division, Toronto, vice J. H. Mills, transferred, was, on Apr. 20, appointed Superintendent of Motive Power and Car Department, vice W. E. Woodhouse, promoted. Office, Montreal.

C. W. VAN BUREN, at one time Master Car Builder, Eastern Lines, has been appointed General Master Car Builder, vice R. W. Burnett, resigned. Office, Montreal.

F. B. ZERCHER, heretofore Superintendent of Car Shops, Montreal, has been appointed Master Car Builder, Eastern Lines. Office, Montreal.

F. McMAHON, heretofore Manager, Chateau Frontenac, Quebec, Que., has been appointed Assistant Manager in Chief of Hotels. Office, Montreal.

W. H. SNELL, heretofore General Agent, Passenger Department, New York, N.Y., has been appointed General Passenger Agent, Eastern Lines, vice Wm. Stitt, deceased. Office, Montreal.

J. E. BEATTY, heretofore Division Engineer, Construction Department, Montreal, has been appointed Division Engineer, Atlantic Division, vice G. L. Wetmore. Office, St. John, N.B.

J. B. WINDROSS, heretofore chief rooming clerk, Chateau Frontenac, Quebec, Que., has been appointed acting Manager, vice F. McMahon, promoted.

F. W. COOPER, heretofore Division Engineer, Eastern Division, Montreal, has been appointed acting Superintendent, District 1, Eastern Division, vice R. W. McCormick, on sick leave, and who died, Apr. 23. Office, Farnham, Que.

The Angus Shops District, Montreal, which has hitherto been operated as a separate unit, is now being operated as part of the Eastern Lines.

H. OSBORNE, heretofore Mechanical Superintendent, Angus Shops, has been appointed Works Manager, Angus Shops, Montreal.

J. A. SHAW, heretofore Electrical Engineer, Angus Shops, Montreal, has been appointed Electrical Engineer of the company. Office, Montreal.

J. W. HUGHES has been appointed Electrical Engineer, Eastern Lines. Office, Montreal.

R. McKILLOP, heretofore in Assistant Chief Engineer's Office, Montreal, has been appointed Division Engineer, Eastern Division, vice F. W. Cooper, promoted. Office, Montreal.

R. JOHNSTON, heretofore Night Foreman, Sortin Yard, Montreal, has been appointed Assistant Foreman, Hochelaga, Que., vice J. Cave, who is employed at Outremont as a fitter. The position of Night Foreman at Sortin Yard has been abolished.

G. A. C. PHILLIPS, heretofore agent Telegraphs, Calgary, Alta., has been appointed agent Telegraphs, Montreal, vice A. Walsh, retired.

On account of the death of G. Duncan, heretofore City Passenger and Ticket Agent, Ottawa, Ont., the work has been divided, and T. MULLINS, heretofore City Passenger Agent, Toronto, has been appointed City Passenger Agent, and A. L. SAUVE, heretofore City Ticket Agent, Detroit, Mich., has been appointed City Ticket Agent, there.

W. J. PICKRELL, heretofore Superintendent, District 2, Atlantic Division, Aroostook Jct., N.B., has been appointed Master Mechanic, Ontario Division, vice D. T. Main, promoted. Office, Toronto.

W. FULTON, heretofore City Passenger Agent, London, Ont., has been appointed Assistant District Passenger Agent, Rail Lines, Toronto, vice E. F. L. Sturdee, promoted.

WILLIAM McILROY, heretofore City Passenger Agent, Hamilton, Ont., has been appointed City Passenger Agent, Toronto, vice T. Mullins, transferred to Ottawa, Ont.

H. J. McCALLUM, heretofore chief clerk, City Ticket Office, Toronto, has been appointed Station Ticket Agent, Union Station, Toronto, vice J. H. Radcliffe, promoted.

A. CRAIG, heretofore ticket clerk, C.P.R. station, Hamilton, Ont., has been appointed City Passenger Agent, Hamilton, Ont., vice W. McIlroy, transferred to Toronto.

J. H. RADCLIFFE, heretofore Station Ticket Agent, Union Station, Toronto, has been appointed City Passenger Agent, London, Ont., vice W. Fulton, transferred.

J. S. BYROM, heretofore port steward, British Columbia Coast Service, C.P.R., Vancouver, has been appointed Superintendent of Great Lakes Steamers, vice S. Buchanan, retired. Office, Port McNicoll, Ont.

J. H. MILLS, heretofore Master Mechanic, Ontario Division, West Toronto, has been appointed Master Mechanic, Lake Superior Division, vice H. G. Reid, transferred. Office, North Bay, Ont.

F. J. MAHON, heretofore Superintendent of Telegraphs, Eastern Division, Montreal, has been appointed Inspector of Telegraphs, Saskatchewan Division. Office, Saskatoon.

M. J. SCOTT, Master Mechanic, Saskatchewan Division, Moose Jaw, is reported to have been appointed Master Mechanic, Alberta Division, Calgary, vice A. Sturrock, transferred.

A. STURROCK, Master Mechanic, Alberta Division, Calgary, is reported to have been appointed Master Mechanic, British Columbia Division, Vancouver, vice D. T. Main, promoted.

E. F. L. STURDEE, heretofore Assistant District Passenger Agent, Toronto, has been appointed General Agent, Passenger Department, Boston, Mass., vice F. R. Perry, promoted.

F. R. PERRY, heretofore General Agent, Passenger Department, Boston, Mass., has been appointed General Agent, Passenger Department, New York, N.Y., vice W. H. Snell, promoted.

W. C. ELMER, heretofore chief clerk, C. P.R., Union Station, Toronto, has been appointed City Passenger Agent, Detroit, Mich., vice A. L. Sauve, transferred.

**Central Vermont Ry.**—C. F. BLACK has been appointed Attorney, vice C. W. Witters, deceased. Office, St. Albans, Vt.

**Champlain Transportation Co., Lake George Steamboat Co.**—E. H. DOW has been appointed General Baggage Agent, vice C. E. Durkee, resigned.

**Grand Trunk Pacific Ry.**—G. BRADSHAW, Safety Engineer, G.T.R. and G.T. Pacific Ry., who had offices at Montreal and Winnipeg, has moved to Union Station, Toronto.

The following station agents have been appointed,—Pope, Man., A. Gatherwood; Uno, Man., W. Downes; Dugald, Man., E. Jones; Asquith, Sask., F. H. Keefe; Othson, Sask., W. C. Ross; Chauvin, Alta., O. Hawthorn.

**Grand Trunk Ry.**—G. BRADSHAW, Safety Engineer, G.T.R. and G.T. Pacific Ry., who had offices at Montreal and Winnipeg, has moved to Union Station, Toronto.

GEO. A. BUTLER has been appointed acting Assistant Engineer, Belleville Division, vice C. S. Ogilvie, who has enlisted for active service. Office, Belleville, Ont.

The following station agents have been appointed,—Aubrey, Que., C. Arnold; Milton, Ont., J. E. Bell; Copetown, Ont., C. S. Kerton; Burgessville, Ont., J. E. Proctor; Rose Point, Ont., E. Swinden.

**Lake Erie & Northern Ry.**—MARTIN N. TODD, President, Galt, Preston & Hespeler St. Ry., has also been appointed General Manager of the L.E. & N.R., vice W. P. Kellett, resigned. This line is under construction between Galt and Port Dover, via Paris, Brantford and Waterford, 51 miles, and has been leased to the C.P.R.

**New York Central Rd.**—E. R. BISSELL, heretofore Assistant Superintendent, Michigan Division, Toledo, Ohio, has been appointed Superintendent, Detroit Division, vice W. F. Schaff, transferred. Office, Detroit, Mich.

E. D. MOON, heretofore Assistant Superintendent, Ashtabula, Ohio, has been appointed Assistant Superintendent, Michigan Division, vice E. R. Bissell, promoted. Office, Toledo, Ohio.

**Niagara Gorge Rd.**—G. H. STAGG has been appointed Travelling Passenger Agent, Buffalo, N.Y.

**Pere Marquette Rd.**—L. C. WHITE has been appointed General Car Foreman, St. Thomas, Ont., vice A. White.

**Railways Department.**—E. V. JOHNSON, formerly Inspecting Engineer, has been transferred to the Department's inside service at Ottawa. ALEX. FERGUSON,



formerly on National Transcontinental Ry. construction, is now making inspections of railways for the Department for subsidy purposes and will probably be appointed Inspecting Engineer.

**Roberval-Saguenay Ry.**—J. A. FRIGON, heretofore Supervisor of Track, Lake St. John Division, Canadian Northern Ry., has been appointed Superintendent, R.S. Ry., in charge of transportation and maintenance of way departments, maintenance of locomotive equipment, shops, for the safe and

economical movement of trains and the endorsement of all rules and regulations for the proper management of station service and discipline of men. Office, West Chicoutimi, Que.

**Wabash Rd.**—E. F. KEARNEY, one of the Receivers, has been elected President. Office, St. Louis, Mo.

**White Pass and Yukon Route.**—J. W. PROBERT has been appointed Treasurer, vice F. J. Cushing. Office, Chicago, Ill.

## The Late T. C. Keefer and the Plans for the Victoria Bridge.

In an obituary note of the late T. C. Keefer, a contemporary states that he prepared plans for the Victoria bridge. Those who recall that famous old structure across the St. Lawrence at Montreal would doubtless construe the above statement as meaning that he was responsible for its design. It may be well, therefore, to review a chapter of engineering history known to few engineers of the present day.

In 1851 Mr. Keefer was employed by the Montreal & Kingston Rd. Co. (predecessor of the G.T.R.), to study the problem of bridging the St. Lawrence at Montreal. Although then only 30 years of age, he had already become one of the foremost of Canadian engineers. From previous work for the Canadian Government he was thoroughly familiar with the St. Lawrence River and the difficulties with ice conditions, etc., to be met in connection with its crossing. He prepared plans for a bridge with 300-ft. wooden truss spans, except the central span, for which a 400-ft. iron-truss structure was proposed. The bridge was to be carried on masonry piers, which were to be built inside timber-crib coffer-dams of special design. After the piers were completed, these timber cribs were to be left in place and on the upstream end of each crib was to be built an inclined plane to form an ice-breaker. The estimated cost of the entire structure was \$1,600,000.

Admittedly, Mr. Keefer's spans were bold for the engineering facilities and knowledge of that day. The directors of the railway company hesitated to trust the design of so important a structure to home talent, and they rejected his plans. The way in which Robert Stephenson's design for a tubular bridge came to be adopted in its stead is related as follows in Smiles' "Life of Robert Stephenson":

"In 1852 A. M. Ross, who had superintended under Robert Stephenson the construction of the tubular bridge over the Conway in Wales, visited Canada and inspected the site of the proposed bridge at Montreal, when he readily arrived at the conclusion that a like structure was suitable for the crossing of the St. Lawrence. He returned to England to confer with Robert Stephenson on the subject, and the result was the plan of the Victoria Bridge, of which Robert Stephenson was the designer and A. M. Ross the joint and resident engineer."

For the benefit of some of the younger members of the profession, it may be well to state that the Victoria bridge, like Stephenson's earlier notable structures, the Britannia bridge and the Conway bridge, was simply a rectangular box through which the trains ran. The top and bottom of the box formed the upper and lower chords and the sides the webs of what was practically a girder structure. It must be remembered that when Stephenson invented this peculiar type of bridge, the engineering world as a whole was ignorant of anything but the rudiments of the stresses in girders and trusses. The railway itself was in its infancy and nothing was known as to the corrosive effect of the gases from locomotives upon exposed metal work. In the early '50's, Stephenson was at the pinnacle of his fame. His tubular bridges in England had been heralded to the public as a triumph of

engineering skill, although there were even at that day in the engineering profession a few wise enough to criticize the design. It was not at all strange, however, that the directors of the Montreal & Kingston Rd., believing the task of bridging the St. Lawrence was one of unprecedented difficulty, decided to entrust the building of the bridge to an engineer of world-wide fame.

Mr. Stephenson visited Canada while the designs for the huge bridge were being completed, and it is stated that he rejected all the suggestions made by Mr. Keefer and other Canadian engineers. The piers of his structure were of massive masonry and were long held up to the profession as most remarkable examples of high-class stone work. While the bridge superstructure was 16 ft. in width, the piers were made 21 ft. wide at the bridge seat. Whether this was to secure a more stable structure against ice thrust or in foresight of the day when a new and heavier structure might replace the original, is uncertain.

The total cost of Stephenson's Victoria bridge was \$7,500,000, a sum which in view of the low prices of labor and of all materials other than iron then prevailing would correspond to probably \$12,000,000 at the present day. The heavy financial burden involved in the construction of this bridge nearly bankrupted the railway company.

Notwithstanding its enormous cost, and perhaps because of it, the Victoria bridge was hailed by the public and by a large proportion of the engineering profession as the eighth wonder of the world. But there were not wanting engineers, even at that day, who believed in that definition of an engineer (which had not then been formulated) as "a man who makes a dollar earn the most interest," and who understood that a truss bridge could have been built across the St. Lawrence in place of Stephenson's gigantic iron box for a small fraction of the cost.

By the time work on the Victoria bridge was actually under way, the Warren truss and Bollman truss had come into use, the Fink truss had been invented, the lattice girder had been applied to long spans and the Howe truss was in extensive use on American railways in spans up to 250 ft. The disadvantages of the tubular bridge were not long in making themselves manifest. Passage through it had all the objectionable features of gas, smoke and darkness attendant upon traffic through a tunnel. The steam and sulphur gases confined inside the structure rapidly attacked the metal and corrosion went on apace. Perhaps the most serious feature of all was that those responsible for the safety of the bridge found it well nigh impossible to determine what was its margin of strength. Inspection of its interior was exceedingly difficult. As engineers became more familiar with the theory of stresses in girder structures, the defects in the design of the old tubular bridge became more evident.

Year by year the condition of the old structure was a matter of great anxiety to the G.T.R. officials. It was necessary to

keep a riveting gang constantly at work on the bridge the year round replacing rivets whose heads had popped off. Wrought iron rivets had been used, of course, in the original construction, but their failure indicated the over-stressed condition of the structure.

There came a time when the G.T.R. officers desired to fortify their judgment with the advice of some eminent consulting engineer. They called in the late T. C. Clarke, who was then far advanced in years, but who held a leading position among American bridge engineers. He went into the bridge with a party of the G.T.R. engineers and saw the terrific corrosion which its plates had suffered. Just then a freight train came through the bridge and he ran as fast as he could from the centre of the span to one of the piers and remained over it until the train had passed. His report, it is needless to say, was to the effect that the company ought to replace the old bridge with a modern structure at the earliest possible moment. Such replacement was soon started.

It has seemed well to set down these facts, not only to record an interesting and almost forgotten chapter of American engineering history, but in order that the professional record of the eminent Canadian engineer T. C. Keefer, might be free from the charge that he was in any degree responsible for the design of the old tubular bridge at Montreal.—Engineering News, New York.

**Canadian Government Railways Employees' Complaints.**—The representative of the Canadian Brotherhood of Railway Employees has placed a list of grievances before the General Manager, alleging the failure of the management to live up to the agreement of Mar. 21, 1913, to make promotions based on seniority alone, refusal to make agreement covering pier employees at Halifax and St. John, and refusal to approve of the absorption into the brotherhood of the maintenance of way employees. F. P. Gutelius, General Manager, is reported to have stated that promotion is based on merit and for the best interests of the service, but that other things being equal, seniority is recognized.

**Suit re Grain Insurance.**—A new trial has been granted on the application of the C.P.R. from the judgment of Mr. Justice Britton, awarding James Richardson & Son, of Kingston, Ont., judgment for \$23,068.40. Richardson & Son shipped 90,000 bush of oats from Fort William to Owen Sound by the s.s. Keewatin. Before they were notified of its arrival, it had been transferred into the C.P.R. elevator, which was destroyed by fire. The consignors claimed that they would have increased the \$200,000 insurance they had on the grain already in the elevator, if they had known of the arrival of the shipment. As it was, their loss was \$228,098.45, much exceeding the insurance.

**Canadian Railway Club.**—At the monthly meeting in Montreal, April 13, J. R. Britton, Schedule Inspector, C.P.R., read a paper on systematic valve settings on locomotives, and Lt. Col. Lacey R. Johnson, General Welfare Agent, C.P.R., was to have read one on modern heavy guns as used in the present war, but was prevented by illness, which proved fatal.

J. A. Culverwell, of Port Hope, Ont., a hydraulic engineer who was interested in water power development in the Trent Valley district of Ontario, died in Toronto, April 21, aged 49.

The members of the Canadian Overseas Railway Construction Corps, now being mobilized at St. John, N.B., are being provided with a pipe, 5 lbs. of tobacco, and 6 packets of cigarettes, from a fund started by Sir Thos. Shaughnessy, President C.P.R.



# Canadian Railway AND Marine World

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## The Retirement of Hayter Reed from Canadian Pacific Railway Service.

Canadian Railway and Marine World for March contained a notice of the retirement, from Apr. 1, of Hayter Reed, Manager in Chief of Hotels, C.P.R., Montreal, and the appointment of a successor. The President, Sir Thomas Shaughnessy, has since made the following announcement: "Having reached the age limit under the company's regulations, Hayter Reed, Manager in Chief of the Hotel System, is retiring, after 15 years of active service, during which he has seen the hotel system grow to its present very large proportions. The characteristic tone and atmosphere of the hotels, that have given them a world wide reputation, may be attributed almost entirely to Mr. Reed's native sense of refinement and his unlimited effort to maintain a high standard of excellence. His successor, F. L. Hutchinson, received nearly all his hotel training during the years that he was in that branch of the company's service."

Mr. Reed was born, of English parentage, at L'Orignal, Ont., May 26, 1849, and educated at the Model Grammar School and Upper Canada College, Toronto. He passed the Royal Military School in 1865, and was appointed Lieutenant, 14th Regiment, in 1866, and later Adjutant, Captain in 1868, and retired as Major in 1881. He served in Manitoba in 1871 with the Battalion of Rifles, and remained on service until the battalion was disbanded. He became a barrister in 1872, and entered the civil service in the Department of the Interior in 1881. He was a member of the Northwest Council in 1882, Assistant Indian Commissioner for Manitoba and the Northwest Territories and acted as Administrator of the Northwest Territories and Commissioner of Indian Affairs in 1884, and Deputy Superintendent General of Indian Affairs at Ottawa, 1893 to 1897, when he retired on a pension. He was elected a chief by the Six Nation Indians at Brantford, Ont., in March, 1894. After leaving the Government service he became Secretary of the St. James Club, Montreal, and entered the C.P.R. service in 1900 as Manager of the Chateau Frontenac, Quebec. On Apr. 3 he was presented with a set of George I. silverware by the C.P.R. hotel managers throughout the Dominion and managers of other hotels in Montreal.

## Great Northern Railway Lines in Canada.

**Projected Lines in Alberta.**—Lethbridge, Alberta, press reports state that G.N. Ry. representatives are active in certain districts on the southern boundary of the province, and in the contiguous territory in Montana, U.S., through which the company has laid out a route for a line of railway. This line starts out from the main line west of Shelby, Mont., along the western boundary of Glacier Park, crossing into Alberta near The Gap, close to Cardston, then on to the group of collieries near Pincher Creek, owned by the Hill interests, and extending to Calgary.

**Vancouver, Victoria and Eastern Ry.**—The Dominion Parliament has granted the company an extension of time within which it may complete the building of its line, now under construction from Grand Forks to Vancouver, B.C. (See Kettle Valley Lines.)

A press report states that an early start will be made by the G.N.R. upon the building of a line from Oroville, Wash., to Penticton, B.C.

**Vancouver Terminals.**—The G.N.R. is applying to the Vancouver City Council for an extension of two years for the laying out of terminals, and the erection of a station building on the area being reclaimed at

False Creek. The company has done considerable work under the agreement, but under present financial and trade conditions wants an extension of time. The city council, on the other hand, wants to have as much work going on in the city as possible in order to give employment. (April, pg. 135.)

## Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those for 1913-14, from July 1, 1914:

	Gross Earnings	Expenses	Net Earnings	Increase or Decrease
July	\$1,594,300	\$1,163,800	\$430,500	x \$83,500
Aug.	1,367,700	1,123,000	244,700	x 162,300
Sept.	2,109,900	1,519,000	590,900	65,500
Oct.	1,895,300	1,332,100	563,200	x440,300
Nov.	1,670,200	1,123,100	547,100	x417,700
Dec.	1,329,100	908,000	421,100	200,000
Jan.	950,800	773,000	177,800	x175,100
Feb.	1,105,100	825,700	281,400	42,800
Mar.	1,379,000	950,000	429,000	62,000
	\$13,401,400	\$8,719,900	\$3,681,500	x\$1,311,100
Decr.	\$4,392,400	\$3,981,300	\$1,311,100	

x Decrease.  
Approximate earnings for three weeks ended Apr. 21, 1914, against \$1,104,600 for same period 1914.

## Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1913-14, from July 1, 1914:

	Gross Earnings	Expenses	Net Earnings	Increase or Decrease
July	\$10,481,971.72	\$6,703,525.89	\$3,778,445.83	\$338,347.35
Aug.	8,917,764.34	6,554,606.68	2,363,157.70	597,081.54
Sept.	10,754,139.67	6,387,091.28	4,367,048.39	45,530.30
Oct.	9,282,028.49	5,361,600.13	3,920,428.36	2,281,629.43
Nov.	8,057,358.89	5,413,386.72	2,644,072.17	2,244,173.89
Dec.	7,443,962.43	5,244,438.62	2,199,523.81	2,027,297.90
Jan.	6,100,026.94	4,968,793.64	1,131,233.30	1,100,024.24
Feb.	6,735,678.49	4,756,663.87	1,979,014.62	507,438.16
	\$68,782,831.01	\$45,990,005.83	\$22,792,824.18	x\$6,890,363.01

Dec. \$22,013,720.00 \$16,123,356.99 \$5,890,363.01  
xDecrease.

Approximate earnings for March, \$7,700,000 against \$9,238,000 for Mar., 1914, and for 3 weeks ended Apr. 21, \$5,930,000 against \$6,571,000 for same period 1914.

## Grand Trunk Railway Earnings, Etc.

The following figures show the earnings for the G.T.R. (including the Canada Atlantic Ry.) the G.T.W.R. and the D.G.H. & M.R. for February:

Grand Trunk Railway.			
Earnings .....		\$2,624,400	
Expenses .....		2,210,100	
Net earnings .....		\$ 414,300	
Grand Trunk Western Railway.			
Earnings .....		\$ 521,000	
Expenses .....		554,400	
Deficit .....		\$ 37,500	
Detroit, Grand Haven and Milwaukee Ry.			
Earnings .....		\$ 178,600	
Expenses .....		212,800	
Deficit .....		\$ 34,200	

Approximate earnings for March, \$4,014,204, against \$4,423,671 for Mar., 1914; and for 2 weeks ended Apr. 14, \$1,872,978, against \$2,066,875 for same period, 1914.

## Traffic Receipts of the System.

Aggregate from Jan. 1 to Feb. 28:—			
	1915	1914	Incr. Decr.
G.T.R. ....	\$8,381,397	\$9,338,659	\$1,000,662
G.T.W.R. ....	1,665,394	1,654,884	\$10,510
D.G.H. & M.R. ....	560,021	549,088	10,933
Totals .....	\$10,606,812	\$11,542,631	\$935,819

Approximate earnings for February, \$3,325,036; against \$3,544,016 for Feb., 1914; and for two weeks ended Mar. 14, \$1,709,298, against \$1,916,794 for same period, 1914.

## Grand Trunk Pacific Railway Earnings.

The approximate earnings of the Prairie Section and Lake Superior Branch, 1,104 miles, for March, were \$361,197, against \$361,998 for Mar., 1914; and for 3 months ended Mar. 31, \$830,231, against \$1,143,807 for same period 1914.



## Canadian Northern Railway Construction, Betterments, Etc.

Sir Donald Mann, Vice President, is reported as stating that the transcontinental line will be completed from Montreal to Vancouver this year, the greater part of it in June. The two sections which are not likely to be put in operation in June are the section between Ottawa and North Bay, Ont., and the part of the C. N. Pacific Ry. between the Alberta-British Columbia boundary and Kamloops.

**Canadian Northern Quebec Ry.**—The Dominion Parliament has extended the time within which the projected line from Rawdon northerly to the National Transcontinental Ry. with a branch from St. Jerome to St. Eustache, Que., may be built.

**James Bay and Eastern Ry.**—An extension of time has been granted by the Dominion Parliament for the building of the projected line from Lake Abitibi, easterly and southerly south of Lake St. John to the mouth of the Saguenay River.

**Montreal Tunnel and Terminal Co.**—A steam shovel is at work taking out the last half mile of material in the double track tunnel under Mount Royal, Montreal. The tunnel is completed to its full size from Maplewood, about a mile citywards. The tunnel is completed at the western end, and it is expected that the entire work will be finally completed by August.

**Canadian Northern Ontario Ry.**—An extension of time has been granted by the Dominion Parliament for the building of the following lines: From Washago to Kincardine; from Arnprior to Gananogue; from Pembroke to Cobourg or Port Hope; from Frenchman's Bay to Owen Sound; from Niagara River to Goderich; from Hawkesbury to or near Lanark; from Berlin through Guelph, Acton and Brampton to Toronto; from Berlin to St. Marys and Woodstock; from Sarnia to Chatham and from Orillia to Goderich, with a branch to Owen Sound, all in Ontario.

**Canadian Northern Ry.**—The Dominion Parliament has granted an extension of time for the building of a number of branch lines in Manitoba, Saskatchewan and Alberta, details of which were given in our Feb. issue, pg. 60.

The Premier of Manitoba stated in the Legislature, Mar. 28, that the company had applied for an additional guarantee of bonds so as to make the provincial guarantee on the entire bond issue \$18,000 a mile. There are 1,407 miles of C.N.R. track in the Province upon which the provincial guarantee is \$10,000 a mile, and 692 miles upon which the guarantee is \$13,000 a mile.

The bill asking for the confirmation of an agreement between the C.N.R. and the Grand Trunk Pacific Ry., respecting terminals at Edmonton, Alberta, referred to in our last issue, was withdrawn from consideration by the Dominion Parliament.

Among the questions raised in the Alberta Legislature during the recent session was the amount of construction done on the Blackfields-Calgary line. The Provincial Engineer in giving evidence before the public accounts committee stated that the line would have a total length of 101 miles, but on the 5½ miles already graded there had been shifted 614,000 cubic yards of material, representing about one-third of the material to be moved on the whole line. The company had been paid \$208,000 from the proceeds of the guaranteed bonds, in respect of this construction, the actual value of the work done being \$323,000. On the remaining 95 miles the average quantity of material to be shifted would average about 14,000 cubic yards a mile.

The Alberta Legislature has passed, after

a lengthy and somewhat acrimonious debate, the necessary provisions for increasing the guarantee of bonds to the C.N. Western Ry., from \$13,000 to \$18,000 a mile in respect of the construction of a line from Oliver to St. Paul de Metis, 100 miles. The estimated cost of the line is \$22,000 a mile.

**Canadian Northern Pacific Ry.**—T. H. White, Chief Engineer, Vancouver, visited the head offices in Toronto at the end of March to consult with the chief executive officers in regard to the completion of the line, etc. It is expected that the ballasting of the main line in British Columbia will be completed by the end of July. The building of stations at the most important points, and the erection of buildings and other facilities at the divisional points, is being gone on with in preparation of the opening of the line for traffic. (April, pg. 134.)

## Railway Rolling Stock Notes.

The Canadian Northern Ry. has received two baggage cars from the Crossen Car Co., completing an order.

The C.P.R. has received 1 steel mail car, 7 flat cars and 2 class D4 locomotives, from its Angus shops, Montreal.

The Intercolonial Ry. is converting 7 first class cars into suburban cars at its Moncton shops by removing the smoking compartment.

The two combined passenger and baggage gasoline motor cars, which the Alberta and Great Waterways Ry. purchased recently, as mentioned in our last issue, are to be operated between Edmonton and Lac la Biche.

The Intercolonial Ry. is converting at its Moncton shops 7 first class cars with smoking rooms to first class suburban cars without smoking rooms. These cars were built by the Wagner Co., are gas lighted, and fitted with vestibules, and when the conversion is completed each car will seat 84 persons.

The Caraquet and Gulf Shore Ry. Bathurst, N.B., has bought Intercolonial Ry. locomotive 1082, which has been thoroughly overhauled. Following are the principal particulars: Builder, Hinkley; date built, 1888; boiler pressure, 130 lbs.; cylinders, 18 x 24 ins.; driving wheels, 4; outside diameter of driving wheels, 63 ins.; weight on drivers, 68,500 lbs.; weight of engine, 81,000 lbs.; weight of engine and tender, 142,000 lbs.; tank capacity, 1,800 gals.; service, freight.

The Toronto, Hamilton and Buffalo Ry. has ordered 10 steel underframe and steel superstructure stock cars from National Steel Car Co. Following are the chief details,—

Centre to centre of trucks.....	26 ft. 10 ins.
Length inside .....	36 ft.
Width inside .....	8 ft. 6½ ins.
Height inside, top of floor to underside of carline .....	8 ft. 0¾ ins.
Wheel base of truck .....	5 ft. 2 ins.
Door opening .....	6 ft.
Draft gear .....	Twin spring type
Drawbars .....	Cast steel
Air brake .....	Westinghouse KC8-12
Side bearings .....	Roller type
Bolsters .....	N.S.C.Co's bathtub type

The House of Commons, at the end of March, voted \$2,250,000 for rolling stock for the Intercolonial Ry., covering the application of superheating apparatus to 12 locomotives; also to purchase 10 Pacific locomotives; 6 consolidation locomotives; 4 switching locomotives; ballasting equipment and rail loaders; 200 steel flat cars; 250 steel gondola cars; 4 light wrecking cranes; and a re-vote for 8 sleeping cars, 4 steel sleeping cars, 4 baggage cars, 2 postal cars, 1 scale testing car and 1 motor inspection car. Most of this rolling

stock has been ordered, and some of it has been delivered, as mentioned from time to time during the past few months in Canadian Railway and Marine World. The only new items appearing in the list are the ballasting equipment and rail loaders, wrecking cranes, scale testing cars and motor inspection car. In addition to the foregoing, \$24,000 was voted for safety appliances for equipment, as ordered by the Board of Railway Commissioners for railways under its jurisdiction.

## A Brakeman's Bravery Rewarded.

J. J. Carter, freight brakeman, C.P.R., was presented by the Governor General in Montreal recently with an Albert medal of the 2nd class for saving a little girl's life at Tweed, Ont., in May, 1914. Carter was on the fireman's side of the locomotive of a train running 18 miles an hour when he saw that the child had got on the track by crawling through a fence. Calling to the locomotive man to stop, he went through the front window on to the running board and so on to the pilot. The locomotive man applied brakes, but could not stop in time, so that the train was running 8 or 10 miles an hour when it got near the child. Just as it came to the spot Carter jumped ahead of the locomotive, and by catching the child with his right hand pulled her along with himself into a ditch clear of the track. The eighth car had reached the spot before the train had come to standstill. In his report, the locomotive man said: "I consider Carter took a desperate chance in doing as he did, as a misstep would have cost him his life." The locomotive man had himself reached the pilot by the other foot board, and thus witnessed the rescue, while the fireman had jumped off between the locomotive and tender trying to run ahead, but was too late to do anything.

Among the officials at the presentation were: W. R. Baker, Secretary; A. D. MacTier, General Manager, Eastern Lines; L. G. Rogers, Assistant Superintendent, District 1, Ontario Division; also the locomotive man, fireman and conductor of the train, together with representatives of the conductors and trainmen from District 1, Ontario Division, in which Tweed is located.

**A Railway's Liability on a Special Contract.**—The Imperial Privy Council has reversed the decision of the Supreme Court of Canada in a case brought against the G.T.R. for damages for personal injuries, by a man taking a horse from Milverton to South River, Ont., on a special contract, relieving the railway company from claims in respect of injuries to persons travelling with cattle. The contract was made with the owner of the animal, and handed to the man, who did not read it, but it was held that the railway company was not liable, and the appeal was allowed, appellants to pay costs as between solicitor and client. This case had been before several of the Canadian courts, and varying decisions had been given.

**Reduced Fares for Soldiers.**—Railway companies in the Eastern Canadian Passenger Association have arranged that upon surrender of certificate, properly filled in and signed by commanding or transport officer, showing name and destination, members of Canadian expeditionary forces in uniform travelling to and from their homes and the various mobilization points will be granted round trip tickets at a fare and one third for the round trip. Tickets are valid for 15 days from date of sale. A similar reduction is made for militia men on leave from certain points who are on duty guarding bridges, canals, etc., and are allowed two days leave of absence each fortnight.



## Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed our paper have a continuous record of the Board's proceedings. No other paper has done this.

The dates given of orders, immediately following the numbers, are those on which the orders were drawn.

General order 135. Mar. 22.—Re rates on newspaper for west of Fort William, Ont. This was published in full in April issue, pg. 138.

General order 136. Mar. 25.—Approving form of release re carriage of household goods.

General order 137. Mar. 26.—Approving amendment to Express Classification for Canada, No. 3, re storage batteries.

General order 138. Mar. 25.—Approving amendment to Express Classification for Canada, No. 3, re moving picture films.

General order 139. Apr. 1.—Suspending proposed advances in commodity rates shown on pgs. 4, 5, 6, and upper part of pg. 7 of Supplement 26 to C.P.R. tariff, C.R.C. no. E-2480, pending decision by Board re application for general increase. Order given in full on another page.

For general orders 136 to 139 see under Traffic Orders by Board of Railway Commissioners, further on in this issue.

23434. Mar. 22.—Authorizing C. P. R. to use bridge 55 over Naiscootyong River, near Naiscott, Ont.

23435. Mar. 20.—Amending order 23386, March 4, re C. P. R. extensions to sidings in Caledon Tp., Ont.

23436. Mar. 20.—Authorizing G. T. Pacific Ry. to build Y at mileage 840 west of Winnipeg, in North Alberta District.

23437. Mar. 22.—Amending order 23363, Feb. 27, re Edmonton, Dunvegan and British Columbia Ry. revised location at mileage 29.

23438 to 23442. Mar. 23.—Authorizing G. T. R. to operate bridges 69, near Harrisburg; 22, Brantford; 28, near Paris; 26, near Brantford, and 27, near Paris, Ont.

23443. Mar. 23.—Dismissing C. P. R. application for approval of revisions in its line west and east of Eugenia St.; of two connections with C. N. O. R. spur; of location of proposed revisions on Ontario St.; and for authority to operate same, in Trenton, Ont.

23444. Mar. 23.—Approving agreement of Bell Telephone Co. and Ayr Rural Telephone Co., March 9.

23445. Mar. 22.—Dismissing application of Ashworth Women's Institute for undercrossing of G. T. R. between Aspsdin and Huntsville, on Town Line between Stisted and Stephenson Tps., Ont., and ordering G. T. R. to build approaches to crossing to grade of 5%, and to build crossing in accordance with Board's standard regulations.

23446. Mar. 23.—Dismissing application of City of Windsor, Ont., for level crossing at Wyandotte St.; and reserving leave to municipality to cross Michigan Central Rd. there overhead as provided by order 10237, Apr. 19, 1910.

23447. Mar. 12.—Approving Hull Electric Co.'s Standard Maximum Tariff, C. R. C. 1, of 2½c. a mile; provided no toll now charged for passengers be increased unless Board's permission be obtained.

23448. Mar. 22.—Dismissing complaint of Canadian China Clay Co. against joint rates charged on china clay, in carloads, from Huberdeau, Que.

23449. Mar. 22.—Authorizing Dominion Department of the Interior to build highway over G. T. Pacific Ry. in s.e. ¼, Sec. 16-45-1, w. 6 m. Jasper Park District, Alta.

23450. Mar. 25.—Ordering that all switching movements be flagged over crossing of Union St., Simcoe, Ont., by G. T. R. trainmen.

23451. Mar. 27.—Authorizing C. N. Alberta Ry. to open for traffic portion of its railway from St. Albert to Peace River Jct., 25½ miles; trains limited to speed of 25 miles an hour.

23452. Mar. 25.—Authorizing G. T. R. to take, for building of highway crossing as required by order 22344, Aug. 5, 1914, certain lands in Tay Tp., Ont.

23453. Mar. 25.—Amending order 19976 re G. T. Pacific Ry. crossing in rural municipality 97, Cedoux, Sask.

23454. Mar. 25.—Authorizing Ontario Public Works Department to build highway over C. P. R. Toronto-Sudbury Branch, in Lot 10, Con. 3, Burwash Tp.

23455. Mar. 24.—Approving agreement between Bell Telephone Co. and East Grey Telephone Co., March 8.

23456. Mar. 26.—Amending order 23426, March 20, re C. N. Ontario Ry. service, Trenton to Maynooth.

23457. Mar. 27.—Approving, temporarily, Edmonton, Dunvegan and British Columbia Ry.

Standard Freight Tariff, C. R. C. 1, and Standard Passenger Tariff, C.R.C. 1.

23458. Mar. 27.—Authorizing Edmonton, Dunvegan and British Columbia Ry. to open for traffic its line from Edmonton to mileage 277, Alta, speed of trains between Edmonton and mileage 170 limited to 20 miles an hour; and from mileage 170 to 277 to 15 miles an hour.

23459. Mar. 29.—Approving Edmonton, Dunvegan and British Columbia Ry. bylaw 5, authorizing A. Campbell, Traffic Manager, to issue all tariffs of tolls.

23460. Mar. 30.—Amending order 23219, Jan. 27, re Hamilton Radial Ry. tracks at Sherman Inlet, Hamilton, Ont.

23461. Mar. 34.—Approving agreement between Bell Telephone Co., and Wakefield and Masham Telephone Co., Feb. 19.

23462. Mar. 27.—Authorizing C.P.R. to build industrial spur for Canmore Coal Co., Canmore, Alta.

23463. Mar. 29.—Authorizing C.P.R. to build bridge 107.2 over Shaw's Creek, near Severn Falls, Ont.

23464. Mar. 30.—Authorizing Interior Department Parks Branch to build highway crossings over C.P.R. between Field and Hector in Yoho Park, B.C.

23465. Mar. 29.—Authorizing C.P.R. to build spur for W. R. Hull, Calgary, Alta.

23466. Apr. 1.—Dismissing Essex Terminal Ry. application for authority to build branch from Lot 59 to Huron St., Sandwich Tp., Ont.

23467. Apr. 1.—Authorizing C.N. Ontario Ry. to build spur from Don Esplanade, Toronto, for Laidlaw Lumber Co.

23468. Apr. 3.—Suspending Supplement 1, cancelling C.P.R. Tariff, C.R.C. no. W. 1936, pending a hearing by Board.

23469. Apr. 1.—Amending order 23398, Mar. 8, re highway diversion by C.P.R. near Balcarres, Sask.

23470. Apr. 3.—Amending order 23415, Mar. 12, re farm crossing over C.P.R. Stobie Branch, McKim Tp., Ont.

23471. Apr. 1.—Amending order 22853, Nov. 9, re building of crossing over G.T.R. at Ashland Ave., by city of London, Ont.

23472. Apr. 3.—Authorizing C.P.R. to use bridge 2.9 over Three Tree Creek, near Fredericton Jct., N.B.

23473. Mar. 29.—Authorizing G.T.R., Pere Marquette Rd. and Michigan Central Rd. to use bridge at crossing of Thompson Road, Bertie Tp., Ont.

23474. Apr. 1.—Approving location and details of G.T.R. new station at Tillsonburg, Ont.

23475. Apr. 3.—Approving agreement between Bell Telephone Co. and Erie Telephone Co., Mar. 22.

23476. Apr. 1.—Dismissing C.P.R. application to remove regular agent at Vienna station, Ont.

23477. Mar. 31.—Authorizing Canadian Northern Ry. to build across and divert road between Secs. 19 and 30-50-8, w. 4 m., Alta.

23478. Apr. 7.—Authorizing C.P.R. to divert highway in n.w. ¼ Sec. 8-32-13, w. 2 m., Sask.; and build highway across its tracks at mileage 97.44, Wynward Subdivision, Sask.

23479. Apr. 6.—Approving American Express Co.'s bylaw, passed March 22, re tariff of tolls, and rescinding order 2645, Mar. 11, 1907.

23480. Apr. 7.—Authorizing Hamilton St. Ry., pending installation of half interlocking plant, to operate cars over crossing of Oliver Chilled Plow Works of Canada's spur on Gilkinson St., Hamilton, Ont., cars to be flagged across; plant to be completed by May 15.

23481. Apr. 7.—Amending orders 23438 to 23442, Mar. 23, re G.T.R. bridges at five points in Ontario.

23482. Apr. 6.—Ordering Canadian Northern Ry. to attach passenger car to trains 93 and 94, between Hawkesbury and Ottawa, to and from Ottawa, for passengers to and from Ottawa only; time to be as at present; all stations may be treated as flag stations; such service be put into effect for 3 months from date.

23483. Apr. 6.—Limiting speed of C.P.R. trains over crossing of Portage Ave., St. James, Winnipeg, Man., to ten miles an hour.

23484. Apr. 6.—Authorizing C.P.R. to build spur for Imperial Oil Co., at Medicine Hat, Alta.

23485. Apr. 3.—Authorizing Hydro Electric Power Commission of Ont. to erect transmission line across G.T.R. in Simcoe, Ont.

23486. Mar. 26.—Authorizing Town of St. Lambert, Que., to build highway crossing over Quebec, Montreal and Southern Ry. at St. James St., and rescinding order 10496, Apr. 28, 1910.

23487. Apr. 7.—Relieving G.T.R. from providing further protection at highway near milepost 17, north of Vankleek Hill, Ont.

23488. Apr. 8.—Authorizing Edmonton, Dunvegan and British Columbia Ry. to open for traffic portion of its line from mileage 277 to 287, trains limited to 15 miles an hour.

23489. Apr. 8.—Relieving G.T. Pacific Branch Lines Co. from erecting and maintaining fences, gates and cattleguards on its Moose Jaw Northwest Branch at Archydal, Sask.

23490. Apr. 9.—Authorizing Dominion Atlantic Ry. to carry freight over its North Mountain Branch from Somerset to Weston, N.S., mileage 12.09 to 14.78; speed of trains limited to 12 miles an hour.

23491. Apr. 7.—Relieving C.P.R. from maintaining night watchman at crossing of First St., Souris, Man.

23492. Apr. 8.—Authorizing village of Port Colborne, Ont., to open Mitchell St., across G.T.R.

23493. Apr. 7.—Authorizing Winnipeg and Northern Ry. and C.P.R. to operate trains over crossing in Lot 101, St. Paul's Parish, Man., without first stopping.

23494. Apr. 6.—Dismissing C.P.R. application for authority to remove regular agent at Clarendon station, Ont.

23495. Apr. 9.—Authorizing Esquimalt and Nanaimo Ry. to build siding for Curtis and Sears Lumber Co., at mileage 100.6, Nanose District, Vancouver Island, B.C.

23496. Apr. 9.—Approving clearances of elevated stone bin over C.P.R. siding at mileage 68.4, Port McNicoll Subdivision, Ont.

23497. Apr. 8.—Ordering Bell Telephone Co. to file tariffs, applying same tolls to territory recently annexed to City of Toronto, formerly known as North Toronto, to be effective Jan. 1, 1916.

23498. Apr. 3.—Extending to Aug. 31 time within which C.P.R. shall complete fencing certain portions of its right of way through Indian Reserves in British Columbia.

23499. Apr. 3.—Approving National Express Co.'s bylaw, Mar. 22, re tariff of C.P.R.

23500. Apr. 3.—Dismissing complaint Christie, Henderson & Co., Toronto, against refusal of G.T.R. to allow for 296 doors furnished for cars of lime shipped from Galt, Ont.

23501. Apr. 6.—Authorizing C.P.R., pending further order, to remove regular agent at Snow Road station, Ont., caretaker to be appointed for accommodation of passengers and care for l.c.l. freight and express matter.

23502. Apr. 6.—Dismissing application of Village of St. Joseph de Sorel, Que., for order directing Quebec, Montreal and Southern Ry. to build station there; and ordering Q.M. & S. Ry. to show St. Joseph de Sorel on its timetable as a flag station.

23503. Apr. 8.—Ordering J. H. Jones, Toronto, to pay G.T.R. rent for siding for last 3½ years, less expense he may have been put to for cartage by refusal of G.T.R. to continue delivering cars over siding; G.T.R. to resume such service forthwith.

23504. Apr. 10.—Dismissing application of G. T. Clarkson, Toronto, trustee for creditors of Lloyd & Sons, Trenton, Ont., to restrict right of expropriation; and ordering that arbitration pending herein, to determine compensation in respect petitioners' land and for damages, be continued.

23505. Apr. 8.—Authorizing the City of Toronto to build subway under G.T.R. at extension of Wilton Ave., to connect with Dickens Ave., Toronto, Ont.; 20¢, not exceeding \$5,000, of cost to be paid out of the railway grade crossing fund; \$10,000 by G.T.R.; and balance by the city.

23506. Apr. 3.—Dismissing complaint of Capt. E. Elliott, owner of Lot 3, Block 12E, Lindsay, Ont., against closing, by Georgian Bay and Seaboard Ry. (C.P.R.) of north end of Caroline St.

23507. Apr. 10.—Reducing rate of 3½¢ per 100 lbs. on manure from Toronto to St. Catharines, Ont., for Canadian Northern Ry. track delivery, down to item 226 of G.T.R. Tariff C.R.C. no. E-2035, the rate of 2½¢ per 100 lbs. previously in effect to be restored, subject to minimum carload weight of 60,000 lbs. and to provision of seasonal inter-switching order, 1888, July 8, 1908, clause to be effective by Apr. 21.

23508. Apr. 8.—Dismissing C.P.R. application for order amending order 22691, Oct. 9, 1914, regarding consideration of grade crossing, Yonge St., North Toronto, Ont., so as to provide that the approach to subway on southerly side shall have grade of 50¢ instead of 25¢.

23509. Apr. 8.—Ordering City of Toronto to pay C.P.R. its proportion of expense incurred to date on 2-track viaduct, North Toronto grade separation, as required by order 22825, upon receipt of monthly certified progress estimates showing amount expended thereon until completed, any dispute to be settled by Chief Engineer of Board.

23510. Apr. 9.—Relieving C.P.R. and G.T.R. from maintaining night signalman at crossing 2¼ miles north of Glencoe, Ont.

23511. Apr. 12.—Ordering Michigan Central Rd. by June 1 to install improved type of automatic bell at crossing of parish highway immediately west of Stevensville station, Ont. 20¢ of cost to be paid out of railway fund.

23512. Apr. 12.—Authorizing Canadian North-



ern Ry. to build across, close and divert two miles west of No. 1. See 19-10-21, w. 2 m., Sask. 23513. Apr. 12.—Amending order 23180, Jan. 10, to crossing of C.N. Pacific Ry. by Kettle Lake, at H. P. R. C.

23514 to 23520, Apr. 12.—Authorizing C.N. Alberta Ry. to build across roads at 7 points.

23521. Apr. 7.—Dismissing application E. W. Lester, Montreal, for special winter rate on lumber and green pulpwood which shall equal that applied on dry, peeled wood by applying weight per cord of dry wood to the green wood.

23522 to 23530. Apr. 12.—Authorizing C.N. Alberta Ry. to build across roads at nine points.

23531. Apr. 12.—Approving revised location Canadian Northern Ry. through Tps. 11 and 12, R. 5 and 6, w. 3 m., Sask., mileage 79.89 to 83.12 and 87.54 to 92.22.

23532. Apr. 12.—Authorizing C.P.R. to build on St. Lawrence River Pulp and Paper Mills, Ltd., Sturgeon Falls, Ont.

23533. Apr. 12.—Approving, temporarily, Toronto, Hamilton and Buffalo Ry. new form of 14-point Special Contract (Form 11).

23534. Apr. 13.—Rescinding orders 23027 and 23028, Dec. 1, 1914, and authorizing C.N. Ontario Ry. and C.P.R. to operate over crossing in Lot 4, Con. 5, McKim Tp., Ont.

23535. Apr. 13.—Authorizing C.P.R. to divert public highway west of Worthington station, Ont., so as to cross tracks east of station; and to divert traffic from and close present trespass crossing, about 700 ft. east of station.

23536. Apr. 10.—Dismissing application of Sudbury Brewing and Malting Co., Sudbury, Ont., for order directing C.P.R. to apply milling-in-transit privilege to malt grain ex Fort William, which as "dried grain," or feed, is reshipped from applicant's brewery.

23537. Apr. 13.—Dismissing G.T. Pacific Ry. application for authority to remove regular agent at Elie, Man.

23538. Apr. 14.—Authorizing Town of Walkerville, Ont., to build easterly extension of Seminole St. from Walker Road across Lake Erie and Detroit River Ry. (P.M.R.) to easterly limits of municipality, at rail level, as shown on plan.

23539. Apr. 13.—Approving location C.N. Alberta Ry. combined station and section house at Heda.

23540. Apr. 12.—Relieving G.T.R. from providing further protection at crossing of first public highway west of Lansdowne station, Ont.

23541. Apr. 14.—Relieving C.N. Quebec and N.T.R. from maintaining night signalman at crossing near Tawachiche station, Que.

23542. Apr. 14.—Relieving C.N. Ontario Ry. and G.T.R. from maintaining night signalman at crossing near Mount Albert, Ont.

23543. Apr. 14.—Authorizing City of Montreal to extend Boyce St. across C.N. Ontario Ry. at level as shown on plan; and reserving leave to C.N.O.R. to lay tracks across highway created within limits of its property, and as approved by Board's Chief Engineer.

23544. Apr. 14.—Ordering C.P.R. to build farm crossing for Lewis Springer, Drumbo, Ont., at mileage 75.7, London Subdivision; to be completed by May 15.

**Russian Order for Canada.**—A London cablegram of April 18, announced the arrival there from Petrograd, of W. W. Butler, Vice President, Canadian Car & Foundry Co., Montreal, and that he had secured an order from the Russian Government for 2,500,000 each of shrapnel and explosive shells, the order aggregating about \$70,000,000. The cablegram added that Mr. Butler would leave in a few days thereafter for Paris.

**The International Railway Fuel Association's** annual convention will be held at Chicago, Ill., May 17 to 20. The matters which will be reported on include mining and preparation of coal; influence of the operating officials of railways on fuel economy; the locomotive including practices in relation to the handling of locomotives; fire boxes; and accounting.

**Western Canada Railway Club.**—J. G. Sullivan, Chief Engineer, C.P.R., Western Lines, addressed the club recently on economics of railway location. He did not read a paper on the construction of the Rogers Pass tunnel as stated in a number of publications.

**Wabash Rd. to be sold.**—A St. Louis, Mo., press despatch says a federal judge has ordered a sale of the Wabash Rd. by the receivers.

## Handling of Stores on Intercolonial Railway.

The changes which were made in the handling of stores on the I.R.C. some months ago are said to have proved very satisfactory. The stores outside of Moncton, N.B., which formerly were under the mechanical department and in charge of the mechanical foremen, now come directly under the stores department.

A card system has been adopted in connection with the stock book at the various points at which there are stores. The stock book is sent to Moncton once a month, and all stocks on hand are recapitulated so as to show at a glance the quantities of each kind of supplies at every stores point. In this way, if it is found that there is too much stock at one place it can be transferred to another, and supplies that become obsolete can be taken into Moncton and examined.

Each store outside of Moncton is supposed to carry only 30 days stock. Requisitions are sent in on the first of each month. Stores supplies are loaded in one car and shipped direct to the store point, and a schedule of shipments is made, so that the cars go out to the different stores at stated dates, thus giving time for shop material that is being repaired or made to be put into the car, and to enable the storekeeper to know exactly what day the car will be shipped.

In connection with the change in system a number of changes have been made in the officials in charge.

W. G. Harris, appointed storekeeper at Halifax, N.S., volunteered for overseas service, and G. E. Hennessy has been appointed acting storekeeper in his stead.

E. R. McPherson, formerly storekeeper at

Sydney, N.S., has been transferred to Halifax, N.S.

H. L. Johnson, formerly storekeeper at Gibson, N.B., has been appointed storekeeper at St. John, N.B., vice G. R. McCafferty.

F. R. Dunbar, formerly mechanical clerk at Gibson, N.B., has been appointed storekeeper there, succeeding H. L. Johnson, transferred.

F. C. Lutz has been appointed storekeeper at Campbellton, N.B.

J. H. Brown has been appointed storekeeper at Riviere du Loup, Que., vice J. Bouchard.

C. E. Belanger has been appointed storekeeper at Chaudiere Junction, Que., vice T. Jenkins, transferred to Riviere du Loup as clerk.

Frank Bourgeois has been placed in charge of a substore, which has been established in the Moncton locomotive house in connection with the main stores.

**Locomotive Men's Complaints.**—The Board of Railway Commissioners dealt with complaints of locomotive men, through the Brotherhood of Locomotive Engineers and Locomotive Firemen, at Ottawa, Apr. 6, when it was alleged that the C.P.R. violated the uniform flagging rules, and that the company had failed to equip its locomotives with dump ash pans. On behalf of the company, A. Price, Assistant General Manager, Eastern Lines, stated that no complaints had been received, and the Chief Commissioner arranged that the company and the men get together with a view to an arrangement being made.

Sir Richard McBride, Premier of British Columbia, left for England early in April in connection, it is said, with the sale of Pacific Great Eastern Ry. bonds.

## Grain in Store at Terminal Elevators, Interior Terminal Elevators and at Public Elevators in the East.

Week ended April 15, 1915.					
	Wheat, bushels.	Oats, bushels.	Barley, bushels.	Flax, bushels.	Totals, bushels.
Fort William:—					
C.P.R. ....	230,833	72,857	16,513	3,547	323,750
Consolidated Elevator Co. ....	885,141	357,463	58,741	157,818	1,459,163
Empire Elevator Co. ....	1,674,945	629,965	77,945	190,492	2,573,347
Ogilvie Flour Mills Co. ....	785,816	73,058	20,640	.....	879,514
Western Terminal Elevator Co. ....	1,287,656	125,373	22,759	327,116	1,762,904
G.T. Pacific ....	1,169,339	582,257	32,956	135,465	1,920,017
Grain Growers' Grain Co. ....	1,706,066	460,193	51,761	.....	2,218,020
Fort William Elevator Co. ....	762,252	326,118	54,912	95,050	1,238,332
Eastern Terminal Elevator Co. ..	569,815	205,768	30,266	.....	805,849
Port Arthur:—					
Port Arthur Elevator Co. ....	2,690,608	789,227	82,663	181,482	3,743,980
D. Horn & Co. ....	11,490	6,502	.....	51,838	69,830
Dominion Government Elevator ..	573,800	239,222	8,496	121,376	942,894
Total Terminal Elevators ....	12,347,761	3,868,003	457,652	1,264,184	17,937,600
Saskatoon Dominion Government Elevator ..	153,958	467,006	17,520	.....	638,484
Moosejaw Dominion Government Elevator ..	346,748	168,842	7,092	1,440	524,122
Total Interior Terminal Elevators ..	500,706	635,848	24,612	1,440	1,162,606
Depot Harbor ..	.....	43,650	.....	.....	43,650
Midland:—					
Aberdeen Elevator Co. ....	19,922	45,702	.....	.....	65,624
Midland Elevator Co. ....	.....	.....	.....	.....	.....
Tiffin, G.T.P. ....	24,146	332,269	.....	.....	356,415
Port McNicol ..	201,512	133,789	.....	.....	335,301
Collingwood ..	9,347	.....	.....	.....	9,347
Goderich ..	240,406	37,686	.....	.....	278,092
Kingston:—					
Montreal Transportation Co. ...	15,076	.....	.....	.....	15,076
Commercial Elevator Co. ....	29,160	14,561	.....	.....	43,721
Port Colborne ..	146,135	95,277	88,106	*24,984	354,502
Prescott ..	.....	.....	.....	.....	.....
Montreal:—					
Harbor Commissioners No. 1 ...	157,496	.....	.....	.....	157,496
Harbor Commissioners No. 2 ...	89,213	401,028	8,578	.....	498,819
Montreal Warehousing Co. ....	3,273	134,779	4,167	.....	142,219
Quebec Harbor Commissioners ...	3,994	97,190	.....	.....	101,184
West St. John, N.B. ....	318,646	.....	.....	.....	318,646
Halifax, N.S. ....	.....	.....	.....	.....	.....
Total Public Elevators ..	1,258,326	1,335,931	100,851	24,984	2,720,092
Total quantity in store ..	14,106,793	5,839,782	583,115	1,290,608	21,820,298

\* Corn. † Not reported.



## Intercolonial Railway Construction, Betterments, Etc.

The estimates for betterments and new construction on the I.R.C. were before the House of Commons, Mar. 25, and subsequent days, in committee of supply, and were later on passed. Following are the general items:

Anti-creepers and tie plates .....	\$ 50,000
Bridges—to strengthen .....	700,000
General protection of highways .....	16,000
Installation of block system .....	14,000
Installation of telephone system .....	100,000
Original construction .....	600
Permanent wiring of locomotive houses .....	13,000
Permanent farm crossings and culverts .....	10,000
Power plants at divisional points .....	23,000
Surveys and inspections .....	87,000
Tile drainage in wet cuts .....	4,000
To increase facilities on the line .....	102,000
Water supply—to increase .....	27,000
Amherst—additional facilities .....	16,000
Bathurst—spur line .....	62,400
Chatham—diversion of line and branch .....	2,500
Chaudiere Jct.—St. Romuald second track .....	30,000
Division of line, Nelson—Derby Jct. .....	6,000
Division of line, N. Sydney—Leitch Creek .....	60,000
Fredericton—to increase accommodation .....	5,000
Halifax—docks and wharves .....	30,000
" " docks and wharves .....	300,000
" " new terminal facilities .....	3,000,000
" " to increase accommodation .....	3,500
" " Willow Park sewer .....	14,900
Hampton—subway, etc. .....	39,750
Levis—improvements at .....	200,000
" " new coaling plant .....	75,000
Moncton—locomotive and car shops .....	110,000
" " elimination of crossings .....	125,000
" " installation of roofing .....	22,500
Mulgrave—car ferry and dock .....	354,000
Pugwash spur line .....	5,900
Raising route near Sackville .....	3,500
Mount Jolie (St. Flavie) facilities .....	16,500
St. John—spur to Courtenay Bay .....	112,000
Sussex—improvements .....	1,000
Sydney Mines diversion .....	10,000
Trenton—increased facilities .....	20,000

Referring to the vote of \$3,000,000 on account of the new ocean terminals at Halifax, the Minister of Railways explained that probably only half of the amount voted will be expended this year. The unit at present being laid out, is expected to take care of the traffic in sight, and other units will be gone on with as necessity arises. The completed plans will give ample room for some years to come. Arrangements will be made so that all railways entering Halifax will utilize the terminals.

The above apply to general works of betterments at various points on the line, or to large works already in hand, descriptions of which have already appeared in Canadian Railway and Marine World. The items regarding new construction are detailed as follows:

Five hundred and ten dollars towards building a railway from near Dartmouth via Musquodoboit Harbour and Musquodoboit River valley to Dean's Settlement, N.S. The Minister of Railways explained that it is expected that this vote will complete the line. Grading is 75% completed; the sub-structures for the bridges are in; track has been laid for a considerable distance, and the steel work for the bridges is being delivered. It is expected that the line will be completed this year. The branch projected to Country Harbour will not be built at present.

One million dollars on account of building a line from Sunny Brae to Mulgrave, N.S. Sunny Brae is the terminus of the Nova Scotia Steel & Coal co.'s old line which was acquired by the Government two or three years ago, and the proposed line will traverse a fertile and prosperous part of Guysboro County, passing through Country Harbor and Guysboro, to a junction with the present line at Mulgrave, whence there is ferry connection with Cape Breton Island. In the general estimates referred to above provision is made for the purchase of an additional car ferry, and the building of docks at this point. The car ferry is

being built in England. In 1914, a reconnaissance survey was made over the projected route of this branch. We are officially advised that the \$1,000,000 voted is to start construction on the branch. The maximum gradient will be 0.6, both east bound and west bound, and the maximum degree of curvature 6 degrees, with possibly one or two exceptions. The object of the new line is to give transportation facilities to the central portion of Guysboro County and the port of Guysboro and to build a line with such gradients as will make it the economical route for through heavy traffic to and from Cape Breton. It is the intention to start construction this year and tenders will be called for at an early date.

In regard to the vote of \$62,400 for Bathurst spur line we are officially advised that it will run from the main line near Bathurst into the town and will serve a number of mills, principally the Bathurst Lumber Co.'s new pulp mill. It is proposed to go on with construction this year and tenders will be invited as early as possible. (April, page 136.)

## National Transcontinental Railway Construction.

The Dominion Government has obtained power from the Dominion Parliament to operate the National Transcontinental Ry., from Moncton, N.B., to Winnipeg, pending the completion of negotiations with the Grand Trunk Pacific Ry., for the taking over of the line under the terms of the agreement of 1903, and its operation with the G.T.P. Ry. as a complete unit from Moncton, to Prince Rupert, B.C. This agreement provided for the taking over of the Moncton-Winnipeg line at a rental of 3% upon its actual cost. The negotiations in progress have to do with the ascertaining of the actual cost upon which the rental of 3% is to be paid, and the interpretation of other sections of the agreement. From time to time something is said in the daily press as to the stage which these negotiations have reached but there is no official statement on either side, consequently no importance can be attached to the press despatches. It is, however, admitted by the Minister of Railways, which admission is concurred in by Hon. G. P. Graham, ex-Minister of Railways, that the line is not completed in all its details as contemplated in the agreement, so that the G.T.P. Ry. is justified in not taking it over. Until these negotiations are completed the Railways Department has the power to operate the entire line, either as a complete unit, or in sections, for the benefit of the Dominion.

Parliament has also granted the Department authority to acquire from the G.T.P.R., the branch line from Lake Superior Jct. to Fort William, Ont., 190 miles, with the terminals, facilities and accommodation works, by purchase, lease or otherwise, of the G.T.P.R. or any other company, and of including the same in the N.T.R., so that in the event of the G.T.P.R. failing to agree with the Government, the entire line east of Winnipeg may be operated in connection with existing Government lines. This is being operated by the G.T.P.R. in connection with the section of the N.T.R. between Lake Superior Jct. and Winnipeg, 258 miles, as its Lake Superior Division, with a total mileage of 448. The 258 mile section of the N.T.R. is operated under a special agreement, independently of the general agreement for the whole line contemplated by the act of 1903.

In the House of Commons, April 1, the Minister of Railways said work was commenced upon the building of the station on the site of the Champlain Market, Quebec, June 18, 1914, and was suspended Dec. 20, 1914, because it was considered inadvisable

to carry on masonry and brick work during the severe winter weather. A press report, April 15, stated that work has been resumed.

The House of Commons has voted \$3,500,000 on account of construction of the Quebec Bridge during this financial year. The Minister of Railways stated in the House of Commons, April 1, that there was expended, on account of the bridge, to Oct. 10, 1911, \$8,344,928.09; and since that date to Feb. 28, of the present year, \$7,359,675.45. A later press report states that M. P. and J. T. Davis, the contractors for the sub-structure, have finally completed their work, and have a few men employed removing the balance of their plant, and cleaning up the yards which they had utilized. The St. Lawrence Bridge Co., which has the contract for the steel work, has some 6,000,000 of prepared steel on the spot ready for erection, other steel is going forward, and preparations are being completed for the active pushing of the erection of the main part of the super-structure during the summer. (April, pg. 138.)

## Dominion Government Railway to Hudson Bay.

The Minister of Railways stated in the House of Commons recently that the total length of the line, if completed according to present location, would be 424 miles. The first 250 miles are nearly completed; the next 50 miles are well advanced, and track has been laid on 214 miles. The total estimated cost of the completed line is \$16,000,000, and the amount expended \$7,647,197.41. The estimated cost of the proposed harbor improvements at Port Nelson, on Hudson Bay, is \$10,000,000, less credits for steamships, plant, etc., about \$1,000,000, and there has been expended on plant, steamships, wireless telegraph stations, etc., \$3,480,277.08.

J. D. McArthur, the general contractor for the line, is reported to have said, on a recent visit to Ottawa, that the grading into Port Nelson will be completed next autumn, if labor or other difficulties do not intervene. The construction camps are fully supplied, the plant on the job is ample, and track and other materials are going forward promptly. It will not, he said, be possible to get the track laid into Port Nelson this year on account of the two large steel bridges which have to be built across the Nelson River, the first at the Manitou Rapids. This bridge, upon which work has been started, is at mileage 241.5 from Pas, Man. It will consist of a single track symmetrical cantilever span, with one deck plate girder approach span, resting on three concrete piers and abutments, having a total length of 612.2 ft. from face to face of ballast wall. The foundations of piers and abutments are in solid rock, the piers themselves being 30½ ft. high above foundations. The piers are spaced from the west end ballast wall. 111 ft., 304½ ft., 110½ ft., and 85½ ft. each centre to centre. The concrete work is being done by the general contractor, J. D. McArthur, and the steel work has been let to Canadian Bridge Co., Walkerville, Ont.

The grading subcontract is being carried out by McMillan Bros., and the track laying, ballasting, and telegraph subcontract by the Hudson Bay Construction Co., of which J. D. McArthur is President.

The engineering and construction parties began, starting out from Winnipeg for the season's work, Mar. 28.

The House of Commons has voted \$5,500,000 on account of construction of the railway, terminals and elevators, in the main estimates, and \$350,000 in the supplementary estimates this year.



# Electric Railway Department

## Electric Railway Statistics for Year Ended June 30, 1914

The following abbreviations are used in the names of railways:—E, electric; E.R., electric railway; E.S.R., electric street railway; S.R., street railway. The minus mark (—) in the column for net income or deficit, shows that there was a deficit in the operation of the line to the extent of the figures given. The numbers following the names of the railways, refer to the notes following the table on this page.

	First Main Track Mileage	Gross earnings from Operation	Miscellaneous Earnings	Operating Expenses	Taxes, Funded Debt, etc.	Net Income or Deficit	Total Car Mileage	Fare Passengers Carried
Berlin and Northern Ry.....	2.45	\$ 8,417		\$ 7,601	\$ 1,560	\$ —744	33,500	199,819
Berlin and Waterloo S.R.....	3.20	51,804	\$ 245	37,599	6,987	7,462	261,328	1,167,957
Berlin, Waterloo, Wellesley and Lake Huron Ry. (1).....	17.81	214,995	68	126,304	20,910	67,849	406,393	1,327,995
Brandon Municipal Ry.....	8.50	44,344		50,972	7,914	—14,542	269,679	916,723
Brantford and Hamilton Ry. (2).....	23.00	149,528		117,690	72,856	—41,018	364,125	584,627
British Columbia E.R.....	241.91	4,013,124	2,151,997	3,093,767	905,243	2,166,111	13,030,262	52,734,380
Calgary Municipal Ry.....	55.00	743,858	15,013	570,484	109,982	78,404	3,213,632	17,787,860
Canadian Resources Development Co.....	1.75	2,128		4,455		—2,327	35,843	17,565
Cape Breton E.R.....	30.52	219,326	124,308	131,684	111,015	100,935	673,262	4,167,749
Chatham, Wallaceburg and Lake Erie Ry.....	36.94	137,292		96,785	39,490	—984	325,277	434,646
Cornwall E.R.....	4.00	33,346	20	26,746		6,619	216,742	452,789
Edmonton Interurban Ry. (3).....	8.19	2,559		14,001	425	—11,877	8,096	10,726
Edmonton Radial Ry.....	50.57	650,788		576,116	313,204	—238,532	2,044,286	15,287,376
Fort William E.R. (4).....	11.63	70,411		49,999		20,412		1,658,943
Grand Valley Ry.....	40.36	120,941		92,073	9,383	19,484	491,388	1,604,855
Guelph Radial Ry.....	8.50	49,642	174	32,141	1,629	16,046	249,000	1,192,129
Halifax Electric Tramways Co.....	12.29	303,293	167,875	186,975	72,772	211,420	1,275,527	6,876,003
Hamilton and Dundas E.R. (2).....	7.00	68,096	15	48,112	6,286	13,697	147,289	835,793
Hamilton, Grimsby and Beamsville E.R. (2).....	22.00	146,712		133,017	13,147	547	414,731	782,530
Hamilton Radial Ry. (2).....	25.00	182,353		160,003	50,664	—28,314	552,421	2,031,674
Hamilton S.R. (2).....	22.00	650,090		399,718	93,023	157,348	2,230,370	16,874,097
Hull Electric Co. (1).....	15.67	161,963	32,734	120,911	60,936	12,849	840,353	2,406,171
International Transit Co. (5).....	4.30	81,764	16,563	46,762	21,354	30,211	306,246	1,890,422
Kingston, Portsmouth and Cataraqui E.R.....	8.00	42,238		46,618	5,410	—9,789	199,680	1,160,040
Lethbridge Municipal Ry.....	11.00	56,149	360	62,527	29,531	—35,549	423,665	1,312,447
Levis County Ry.....	11.75	89,881		70,927	15,407	3,546	418,066	1,867,752
London and Lake Erie Ry. and Transportation Co.....	28.00	134,916	97	87,397	47,414	202	412,763	680,549
London S.R.....	25.73	350,375		251,099	39,223	60,052	1,757,518	9,508,486
Moncton Tramways, Electricity and Gas Co.....	3.47	18,908	70,379	19,647	26,233	43,407	97,520	468,751
Montreal and Southern Counties Ry. (6).....	36.84	192,276	106	163,438	4,855	24,088	533,122	1,915,369
Montreal Tramways Co. (1913 Figures).....	124.26	16,754,227		4,032,664			18,144,098	166,809,152
Moose Jaw E.R.....	9.00	138,845		99,061		39,784	579,607	2,639,030
Nelson S.R. (7).....	2.13	6,281		7,902		—620	13,301	146,230
Niagara Falls Park and River Ry. (8).....	11.91	154,449	6,195	86,260	33,702	40,677	295,048	1,451,609
Niagara, St. Catharines and Toronto Ry. (9).....	60.89	553,765		404,676	114,057	35,031	1,074,077	4,656,068
Niagara, Welland and Lake Erie Ry.....	1.74	21,525		10,588	3,713	7,223	86,892	458,450
Nipissing Central Ry. (10).....	10.77	100,129	6	68,584	66	31,484	233,773	1,347,081
Oshawa Ry.....	9.00	89,234	589	68,678	4,270	16,875	98,536	251,138
Ottawa E.R.....	26.17	1,081,398		634,061	56,871	390,464	4,840,795	23,987,883
Peterborough Radial Ry.....	6.04	47,615	—323	29,566	6,690	11,034	280,092	1,060,499
Pictou County Ry. (1912 Figures).....	7.90	56,253	34,415	31,480	40,545	18,643	135,662	1,171,470
Port Arthur E.R. (11).....	12.43	66,350	77	51,905	31,727	—17,204	329,451	1,514,970
Quebec Ry. Light and Power Co.— (12)								
Citadel Division.....	19.77	488,852		299,873		188,978	2,125,963	11,376,975
Montmorency Division.....	26.60	234,368		158,424		65,943	454,606	1,721,079
Regina Municipal Ry.....	30.85	231,169		241,664	120,200	130,695	1,157,330	5,061,264
Sandwich, Windsor and Amherstburg Ry. (13).....	39.93	293,159	75,054	192,837	37,833	137,542	1,040,413	5,083,950
Sarnia S.R.....	8.25	64,035		50,387	4,650	8,997	167,662	1,099,948
Saskatoon Municipal Ry.....	12.63	157,654		132,807	26,022	1,175	684,099	3,472,181
Sherbrooke Ry. & Power Co.....	9.00	48,624	43,799	38,464	56,941	—2,983	443,436	1,097,130
St. John Ry. (1911 Figures).....	12.50	191,412		148,266			1,003,454	4,330,339
St. Stephen S.R.....	7.00	37,806		28,043	5,562	4,200	183,960	727,530
St. Thomas S.R.....	7.00	25,853		30,881		—5,045	295,785	558,914
Surburban Rapid Transit Co. (14).....	19.65	74,621		65,249	27,342	—17,971	254,083	1,152,252
Toronto and York Radial Ry. (16).....	72.43	604,154		411,424	137,664	55,066	1,523,702	6,280,595
Toronto Ry. (16).....	61.57	6,221,838		3,249,272	1,373,350	1,599,215	22,464,665	155,399,173
Toronto Surburban Ry.....	9.84	126,000	1,656	76,708	23,502	27,446	341,428	2,374,558
Windsor, Essex and Lake Shore Rapid Ry.....	36.17	164,407		92,315	56,630	15,461	363,030	512,860
Winnipeg E.R. (15).....	100.87	2,514,158	762,010	1,449,220	478,812	1,348,135	8,653,005	60,046,370
Winnipeg, Selkirk and Lake Winnipeg Ry. (15).....	22.13	110,388		69,722	26,298	44,368	354,803	615,134
Yarmouth E.R. (1912 Figures).....	3.00	20,908		19,223	2,730	1,045	62,976	151,694
Total	1,560.82	\$29,691,007	\$3,503,427 —323	\$19,107,807	\$4,756,055	\$7,127,275 —560,422	98,917,808	614,709,819
			\$3,503,104			\$6,566,853		

### Notes to Electric Railway Statistics.

In the introduction to the statistical report on electric railway operations for the year ended June 30, 1914, the Comptroller of Statistics says: "Four operating lines—the Montreal Tramways Co., the St. John

Ry., the Yarmouth St. Ry., and the Pictou County Electric Co.—did not report. The failure of these companies to comply with the requirements of the law is a serious matter. In order to save the basis of comparison it is necessary to insert figures relating to preceding years, which is most

unsatisfactory. Notwithstanding the delinquency of the companies to which allusion has been made, the reports received disclose a year of substantial progress by the electric railway interests of Canada."

The companies referred to, as we understand it, do not agree with the Comptroller's



statement as to the requirements of the law. They are operating under provincial charters, and, we believe, contend that they are not required to report to any Dominion department.

It will be seen that the total of the column showing total operating expenses, and that showing miscellaneous income, \$23,863,872, deducted from the totals of the column giving gross earnings from operation, and that giving miscellaneous income, \$33,194,111, gives an amount of \$9,330,239, which does not correspond with the total of the column showing net income or deficit, \$6,566,833. This is to be accounted for by the fact that while old figures showing earnings and operating expenses of the Montreal Tramways Co., and the St. John Ry. are given, no items respecting their expenditures on taxes, interest on funded debt, etc., are shown, while they are shown in the case of the Pictou County Electric Co., and the Yarmouth St. Ry., old returns of which are also used.

(1) The Berlin, Waterloo, Wellesley and Lake Huron Ry., formerly Galt, Preston and Hespeler St. Ry., is operated in connection with the C.P.R., which also owns the Hull Electric Co.

(2) The Brantford and Hamilton Ry.; Hamilton and Dundas Ry.; Hamilton, Grimsby and Beamsville E.R.; Hamilton Radial Ry.; and Hamilton S.R., are owned by the Dominion Power and Transmission Co.

(3) The Edmonton Interurban Ry. only started operation at the beginning of June, 1914.

(4) Fort William E.R.—The gross earnings are for six months during which the line has been operated separately from the Port Arthur E.R.

(5) The International Transit Co. is owned by the Lake Superior Corporation, which also owns the Trans-St. Mary's Traction Co.'s line in Sault Ste. Marie, Mich., with a connecting ferry.

(6) The Montreal and Southern Counties Ry. is controlled by the G.T.R.

(7) The Nelson S.R. recommenced operations, Feb. 1, 1914, under municipal management, and the figures given cover the operations from that date to June 30.

(8) The Niagara Falls Park and River Ry. is owned by the International Ry., Buffalo, N.Y.

(9) The Niagara, St. Catharines and Toronto Ry., and the Toronto Suburban Ry. are owned by interests allied with Mackenzie, Mann and Co. (Limited).

(10) The Nipissing Central Ry. is owned by the Province of Ontario through the Timiskaming and Northern Ontario Ry. Commission.

(11) The figures given cover the operations of the Port Arthur E.R., after the separation from the Fort William E.R., in Dec., 1913.

(12) The Quebec Ry., Light and Power Co. also operates by steam over part of its lines, the financial results of which operation are given in the statistics of steam railway operation on an earlier page of this issue.

(13) The Sandwich, Windsor and Amherstburg Ry. is owned by the Detroit United Rys.

(14) The Suburban Rapid Transit Co., and the Winnipeg, Selkirk and Lake Winnipeg Ry. are owned by the Winnipeg E.R.

(15) The Toronto and York Radial Ry. is owned by the Toronto Ry.

The C.P.R., according to a press report, has arranged to take 1,000 tons of coal a day from collieries on its Crowsnest Pass branch in British Columbia, in addition to what is taken from the Alberta coal fields, for use on its Manitoba division.

## Ontario Asked to Subsidize Hydro-Electric Railways.

Several hundred municipal representatives from various portions of the Province waited on the Premier and other members of the Ontario Government in Toronto, Mar. 26, to ask that subsidies at the rate of \$3,500 a mile be given for electric railways to be built by municipalities under the Hydro Electric Power Commission of Ontario's auspices. The deputation was introduced by the Mayor of Toronto.

T. J. Hannigan, Secretary of the Hydro-Electric Railway Association of Ontario, read a memorial signed by the President, J. W. Lyon, of Guelph, and himself, from which the following are extracts:

A large portion of Western Ontario, and various other parts of the Province, have enjoyed for the last four years, cheap power and light for manufacturing and domestic purposes, supplied by the Hydro-Electric Power Commission, and generated from Niagara Falls and other water powers. The achievement of the commission in distributing power at high tension at long distances, and at low cost, is considered one of the greatest works of modern times. The commission deserves the highest commendation and support in its work of distributing power to parts of the province which could not hope for any such advantages if the power was owned and controlled by private interests.

Many portions of the province are not now adequately served by railways, either steam or electric; a very small number of electric lines are now being operated, and these only in the most congested parts. The absence of such electric roads has been the principal contributing factor in the depletion of the rural population of Ontario in the last 10 years to the extent of 96,000, while the urban population has increased 500,000 in the same time. Farmers in great numbers have left their land and taken up their residence in large cities, thereby becoming consumers instead of producers, in order that they and their families might enjoy a larger measure of social intercourse, and that their children might have the privileges of secondary and higher education now largely denied the farming community through lack of adequate transportation.

The present system of transmitting power under high tension renders it useless for commercial purposes without the construction of expensive transformer stations which are only possible in centres of population, but electric railway lines with their lesser voltage would make possible the use of such power to smaller communities and farmers through comparatively inexpensive step-down stations, same being taken direct from the transmission line of the railway along its full length, and distributed to a distance of from 10 to 15 miles on either side. Without the electric railways, the commission states that it is impossible to successfully supply hydro-electric power to that part of Ontario east of Toronto, or to most of the rural parts of the province, whereby it will be made to appear that a large part of Ontario is being discriminated against in the use of hydro-electric power. In view of the wonderful development of electricity and of hydro-electric power in Ontario and its adaptability to the needs of the farming community, the building of electric railways would in consequence furnish an easy and inexpensive means of bringing to the farmer an adequate supply of electric power at minimum cost.

In encouraging the farmers and villagers, by affording them frequent, rapid, and convenient transportation, together with the opportunity for cheap electric power sup-

plied from the railway transmission lines, it is hoped to check the depletion of the rural population. At present, the wealth of this country is not being augmented as it should be in many rural districts, because the producer is so far removed from the market as not to be able, on account of the cost of haulage, to make practically any use of it. Electric roads would bring the market to the door of the producer and conserve to the community a large amount of energy now largely wasted, thus reducing the cost of living to the community at large. Electric roads bear the same relation to steam roads that rural telephones bear to long distance lines.

Your memorialists, realizing the widespread need and benefit of electric railways, especially in portions not now served by steam roads, have by virtue of the Hydro-Electric Act through the several municipal councils to the number of over 200, requested the Hydro-Electric Power Commission to investigate conditions in such portions, in order to report on the advisability of the construction of electric lines in these districts by the commission. The commission has already reported to many of the municipalities that hydro-electric roads could be built and successfully operated, provided they were given a subsidy such as has been already given to some privately owned roads. No subsidy given will be for private gain or profit, but will be expended by a public commission, every dollar going into the physical construction of the road, the undertaking and property never ceasing to be publicly owned and controlled.

The Ontario Government by its policy regarding good roads has shown that it is aware of the importance of cheap and better transportation, and if for vehicle traffic good roads are worthy of the expenditure proposed, how much more so is the system of proposed hydro-electric railways which will be a large revenue bearing utility, because, while good roads are, and must always be a necessity in any community, it will be generally admitted that they are of much less benefit to the farmers of the country than electric railways, as the former will be continually a growing expense, and the latter progressively revenue bearing. The building of these electric roads would virtually mean the rediscovery and resettlement of Ontario, gradually increasing the wealth and population and tax paying power; and as the money will only be wanted very gradually the increased revenue resulting from development should almost, if not quite, equal the money as paid out for subsidy, so that in fact the province would be simply loaning its credit for its own development.

The proposed roads will be most modern in construction and equipment, and on account of their superiority of service can and will do more to regulate the conduct of privately owned railways than any other means which can be devised. If construction of these roads is commenced immediately, it would aid very materially in solving the unemployed problem which has been the cause of great concern to the municipalities during the past year. Such subsidy would not be required for some time, and any subsidy granted would be spread over a term of years as the roads are built.

The deputation is composed of representatives from almost every county from the St. Clair River and Lake Huron to the Ottawa River and the lower St. Lawrence; one of the largest and most representative deputations that has ever visited Toronto; it represents the wishes of the Hydro-



Electric Railway Association of Ontario, made up of over 500 municipalities of which a great many are represented here today by their entire municipal councils. Your memorialists ask that the Ontario Government will grant a subsidy of \$3,500.00 a mile to such hydro-electric railways as shall be recommended by the Hydro-Electric Power Commission of Ontario, and built by virtue of the Hydro-Electric Railway Act.

An address prepared by J. W. Lyon, President of the Hydro Electric Association of Ontario, was to have been read in his absence by ex-Mayor Graham, of London, who, however, said that it would be given to the press instead. After dealing with the result of the Hydro Electric Power Commission of Ontario's work in distributing electric power it claimed that the construction of hydro electric railways would largely reduce the price of power in rural municipalities, increase the value of farm land, create intense and profitable farming, give better facilities to the producer to reach the consumer, reduce the cost of living to the urban population and greatly increase the convenience and benefits of the suburban population. The power lines of the hydro electric railways, which would be of low voltage, would make it practical to serve the rural population with power up to 10 or 15 miles on each side of the lines. It claimed that the construction of hydro electric railways would confer more benefits than the building of good roads.

A number of delegates having spoken, Sir Adam Beck, Chairman of the Hydro Electric Power Commission of Ontario, supported the application.

Premier Hearst, in replying, assured the deputation that no one had more sympathy with the advancement of radial transportation than the members of the Government. The aim of the municipalities was one that appealed to everyone. He reviewed the measures opening the way for radial construction and referred to the difference in the request from the provision originally made by which the Government would be issuing its bonds secured by municipal debentures. The payment of a subsidy of \$3,500 a mile was a matter that would require a great deal of consideration. "We would have to have an idea of what liability we were committing the Province to," he said, "because the more successful these systems were the more the Province would have to pay." Even at the present time the finances of the Province give concern and thought to the Government of the day. Before anything could be done it would be necessary first to see what other sources of revenue could be secured. It was not only a case of considering the propriety of granting such a request." He assured the deputation that the day of subsidies to private interests was gone by and that Sir James Whitney's policy would be lived up to. In closing, Mr. Hearst promised that there would be no delay in taking up the matter.

A few days later the leader of the Opposition, N. W. Rowell, asked in the Legislature if the Premier intended to make any statement of policy in regard to bonusing hydro electric railways before the Legislature adjourned, and was answered in the negative.

**The Jitneys an Aggravation.**—The Calgary Albertan, published in a city which owns and operates an electric street railway, says: "The jitneys skim the cream off the street railway traffic and fatten upon the short haul in the crowded districts. The jitney is a fair weather bird, and keeps under cover in the bad weather. The jitney is not a solution of the traffic question. It is an aggravation."

## Port Arthur and Fort William Municipal Railway Conditions.

Port Arthur, Ont., City Council gave consideration, Mar. 30, to a report upon the electric railway system, prepared at the request of Fort William City Council. The report states that although the gross earnings of the combined lines in Port Arthur and Fort William in 1914 exceeded those of 1913 by \$1,598, the passenger traffic dropped by 381,582 fares, equal to \$15,200. The gain in the earnings of the system was caused by the increased price of tickets, revenue from hauling rock and gravel, and increased contracts for advertising in the cars. The causes of the losses during the year were due to the increase of capital account, the increased cost of operation due to the separation of the old system into two; the expenses of belt lines; the construction of extensions without adequate returns, and the decrease in traffic due to general depression, and abnormal conditions created by the war. The increases for the year to Aug. 31, were \$20,320 over the same period of 1913, but from Sept. 1. to Dec. 31, the decreases were \$18,444. It was estimated that if war conditions had not arisen, the increases for the year would have been about \$30,000. The total car mileage was 649,655, and the total passenger earnings were \$119,811.

The report recommends that no additional lines be built unless it is apparent that they will be self sustaining; that lines which do not now earn the cost of operation be discontinued; that the cost of all lines not built for passenger traffic be not charged to railway capital account, and that debentures be not sold for construction purposes until the work is done, and the cost definitely ascertained.

One man operation on the main line is not possible owing to the fact that it crosses steam railways. At the present time there are only 14 cars operating in both cities, against 32 in the spring of 1913.

## Toronto Suburban Railway Sunday Operation.

At the Ontario Legislature's recent session a bill was introduced in the Toronto Suburban Ry. Co.'s interest the single clause in which provided that notwithstanding anything contained in The Ontario Railway Act, or any other act applicable to the company, the company may operate its railway on Sunday, subject to regulations to be imposed by the Ontario Railway and Municipal Board. In its passage through the House the clause was amended to read as follows:

"(1) Notwithstanding anything contained in the Ontario Railway Act or in any other general or special Act applicable to the company, the company may operate cars and trains upon any part of its railway already constructed or now under construction on the Lord's Day for the carrying of passengers, and the company may run such cars or trains before the hour of 10 o'clock in the forenoon and after the hour of 5 o'clock in the afternoon, on the Lord's Day, as may be necessary for the transportation of milk exclusively, but no freight of any other kind shall be carried, nor shall it be lawful for the company to collect any fare or toll for the transportation of freight on the Lord's Day except for the transportation of milk as aforesaid, but nothing in this section shall be construed to prevent the running of empty cars or trains either from a car shed or any point on the line of a railway for the purpose of receiving the milk for transportation as aforesaid or back

to the car sheds after the delivery of the same.

(2) The exercising of the rights conferred by this section shall be subject to such regulations as the Ontario Railway and Municipal Board may impose."

On April 4 the company started operation on its lines in Toronto and on its suburban lines to Lambton, Weston and Woodbridge. When the line now under construction between Lambton and Guelph is put in operation a Sunday service will also be given on it.

## Regina Municipal Railway Matters.

A protest has been made to the City Council by certain residents against the use which is being made of the cars on the Municipal Ry. for advertising purposes. Some of the cars, it is stated, are literally covered with "sensational" posters.

The value of property of the City of Regina is shown in the annual financial statement under headings: remunerative and realizable; unremunerative and realizable; unremunerative and unrealizable. The Municipal Ry. appears under the first heading as follows: Completed, \$821,879.75; uncompleted but provided for, \$916,002.29; and under the second: Office and sundry buildings and equipment, \$1,552.44, a total of \$1,739,434.48.

The City Council, on April 7, postponed for further consideration a new car schedule prepared by the utilities committee. The new schedule proposes to give a better service in the central districts and a slower service in the annex districts. The committee states that Sunday operation resulted in a loss of \$7,111 in 1914, the loss during the present year to date averaging \$104 each Sunday. The question of submitting a question to the vote of the people as to the further reduction or the dropping of the Sunday car service is under consideration.

The estimates for the Municipal Ry., submitted to the City Council, show a revenue of \$191,940, with an expenditure of \$184,589, or an estimated surplus of \$7,351. The interest and sinking fund charges for the year will amount to \$109,650, leaving an estimated net deficit of \$102,299. The actual loss in operation in 1914, was, \$8,096.67, which added to \$89,365.58, the interest and sinking fund charges for the year, made a total of \$97,462.19, which had to be provided for out of general taxes. The Commissioners state that the present rolling stock is of sufficient capacity to carry three times the present number of passengers; the interest charges covered the cost of large quantities of materials which had been purchased, but which still remained in stock, and for the pavement between the tracks. The annex districts served by the lines had had their assessments considerably added to, so that the system was not losing so much as the figures apparently showed.

The City Council on April 15 adopted the estimates for the current financial year. The utilities committee provided for \$97,462.19 deficit on the municipal railway for 1914, and \$102,299.80 as the estimated deficit for this year. The Council decided to meet these amounts by appropriating the profits from other utilities, and by the sale of debentures already authorized under certain bylaws.

**Hot milling the top and bottom surfaces** of the rail bar when 75% rolled is a new process introduced in the U.S. to eliminate longitudinal cracks and seams from the elongation of the small surface blemishes in the rail ingot.



## Additional Equipment for Toronto Civic Railway.

Tenders were received recently by Toronto City Council for 4 double end single truck, p.a.y.e. cars for Lansdowne Ave. extension, Toronto Civic Ry., of the general design shown in the accompanying illustration. They are to have the single arch roof, with platforms arranged so as to separate entering and leaving passengers. The interior of the car body is to be constructed so as to avoid as far as possible, all ledges and projections or obscure corners where dust and dirt may lodge. Following are some of the principal particulars:

Gauge of track .....	4 ft. 10 $\frac{1}{8}$ ins.
Radius of shortest curve .....	35 ft.
Wheel base .....	8 ft.
Diameter and tread of wheel .....	33 ins.; 2 $\frac{3}{4}$ in.
Length of body .....	21 ft.
Length of vestibule .....	6 ft. 4 $\frac{1}{4}$ ins.
Length overall .....	34 ft. 8 $\frac{1}{2}$ ins.
Width over sheathing .....	8 ft. 5 $\frac{1}{2}$ ins.
Height to top of roof .....	10 ft. 9 $\frac{1}{2}$ ins.
Height to top of vestibule step .....	13 ins. or less.
Height from step to vestibule .....	12 ins. or less.
Height from vestibule to car floor .....	11 ins. or less.
Weight of car body, not over .....	13,500 lbs.
Seating capacity .....	32

The vestibules will be circular in form below the belt rail, and octagonal above. Each vestibule is to have a two leaf folding door on the right, to be operated by the motorman, and two similar two leaf folding doors on the opposite side, to be operated by the conductor. A pipe railing on each platform will separate entering and leaving passengers, and facilitate fare collection.

The roof will be of the single arch or turtle back type, supported on seven steel carlines, one over each side post, and carried through from end to end of the car, with no bulkheads in the ends of the car body. There will be 8 windows on each side of the car, at 30 $\frac{1}{4}$  in. centres, the lower sash dropping into a wall pocket, and the upper stationary. There will be three 5 $\frac{1}{4}$  x 7 $\frac{1}{4}$  in. ventilators on each side of the roof.

Both longitudinal and cross seats are to be finished in rattan. There will be 16 hand straps, 24 ins. long, with enamelled grips. Each side post will have a push button, connecting with a buzzer in each vestibule. The interior of the car is to be varnished quartered oak throughout. They

The cab is to be of the straight vestibuled type, 6 $\frac{1}{2}$  ft. high, sheathed inside and out, and floored with two layers of  $\frac{3}{4}$  in. pine, and with two hinged end doors, centre doors with baggage door hangers, side windows, and regulation three windows in each end, and mounted on a steel under-frame.

The brooms will be of rattan, 32 ins. diam., extending 15 ins. outside of the tracks. These brooms are to be built in segments of four each, making eight at each end of the car. They will be raised and lowered in malleable iron pedestals by hand wheels in each end of the cab, and will be driven through a shaft from a GE80 form A motor. The ploughs will be of  $\frac{3}{8}$  in. steel plate, 24 ins. high and 6 ft. long, operated by raising and lowering mechanism in the cab. The ploughs will clear 4 ft. outside the rail in the open position.

The trucks will be of the heavy pedestal type, on 33 in. chilled iron wheels, 2 $\frac{3}{4}$  in. tread. Each axle will carry a GE80 motor, from stock. To replace these two motors and the broom motors, which are also from stock, four Westinghouse no. 533 commutating pole ventilated motors were included in this tender. The electrical equipment will include in addition two K10 controllers, a R28 controller, set of resistance for car motors, set of resistance for broom motor, lightning arrester, and two circuit breakers.

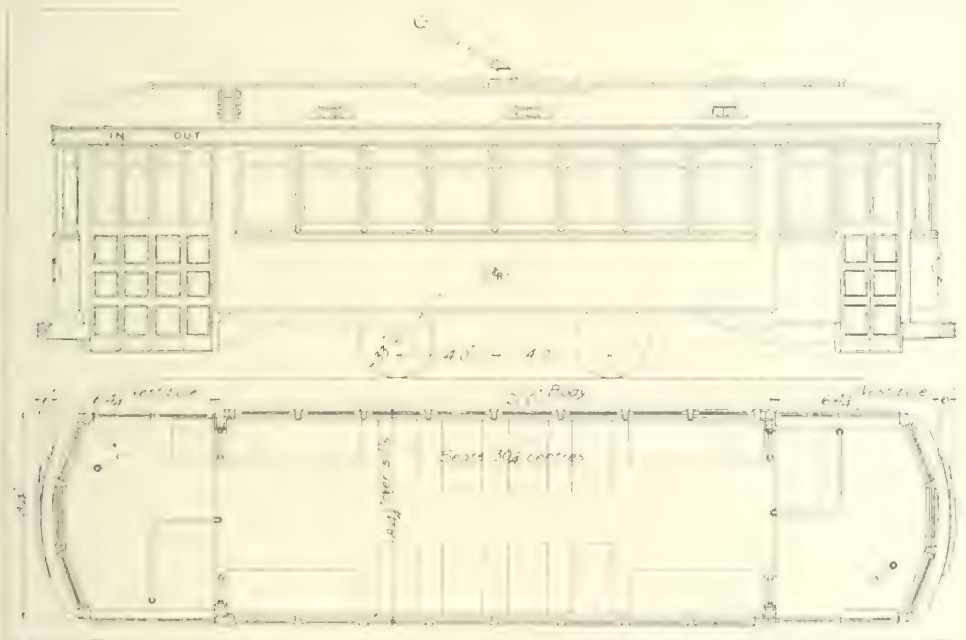
## Running Boards on Toronto Railway Open Cars.

The Ontario Railway and Municipal Board, on Apr. 7, considered the question of the safety of the running boards on the Toronto Ry. cars, on the application of the Toronto Ry. employees' union. On the company offering to equip some of its cars experimentally with a wider running board and new grab handles as desired by the men, the Board postponed the hearing until May 15, in order that they might observe the value of the desired changes.

On the double truck car, the change in the running board consists in widening the top board by 4 ins. to 12 $\frac{1}{2}$  ins., and on the single truck cars to 11 ins., the lower board in both cases being left the same width as before, 9 ins. New grab handles of 1 in. pipe, are also being applied experimentally. These handles are midway in the seat depth, running from the seat end frames vertically to the top rail of the car. Their midway position permits the conductor to pass his arm around them, increasing his freedom of action and safety.

This subject was first up for consideration before the Board on June 9, 1914, as mentioned in Canadian Railway and Marine World for July, 1914. That application was that running boards be abolished, and centre aisle cars be used both summer and winter. As a result, centre aisle cars have been tried on the Toronto Ry., as described in Canadian Railway and Marine World for April. Certain of the cars were equipped with the new grab handle late last autumn, and were said to have proved satisfactory. The grab handles and wider running board are advocated as a substitute for the centre aisle cross seated car.

**Hull Electric Co.'s Fares.**—The Board of Railway Commissioners passed order 23447, Mar. 12, approving the Hull Electric Co.'s Standard Maximum Passenger Tariff, C.R.C. no. 1, to apply on its line on the uniform basis of 2 $\frac{1}{2}$  cts. a mile, provided that no toll now being charged by the company for the carriage of passengers be increased unless the Board's permission has first been obtained.



Single Truck Double End Operation Cars for Toronto Civic Railway.

The underframing is to be entirely of steel, with side members of steel plate with bottom angles, with the end sills also built up of plates and bottom angles. The cross members will be channels, with gusset plate connections to the side plates. The platform knees will be steel plates, with top and bottom angles, and there will be channel centre platform members, with the flanges turned up, which will act both as sustaining members for the platform and buffing members, to which the draw bar chains will be riveted. The bumpers will be 6 in. channels, extending continuously from knee to knee, conforming to the shape of the vestibule, with an anti-climber section, 3 $\frac{1}{2}$  ft. long, on the face of each bumper.

The platform flooring will be single of  $\frac{3}{4}$  in. oak, while that in the body of the car will be double, with an intervening waterproof felt, the lower layer of Georgia pine, and the upper maple, each 13-16 in. thick. The framing above the steelwork will be white ash and Georgia pine, with the corner posts of the vestibule and body covered with steel pressings.

will be equipped with pantasote curtains, polished bronze trimmings, Crouse-Hinds headlights, handbrakes, life guard fenders, 4 sanders, coal burning forced ventilation heater, fare box holders, sign boxes, and side window guards.

The trucks will each carry two GE80 form A motors, which will be supplied out of stock. To replenish stock, 8 Westinghouse interpole ventilated motors, no. 533, are being ordered. Each car will have two K10 controllers, two 200 to 600 amp. circuit breakers, a lightning arrester, choke coil and set of resistance.

Tenders were also received for a sweeper body and equipment for the St. Clair Ave. line. It will be of the single truck type, with steel underframe, and equipped with steel side ploughs and two brooms for double end operation. Following are general particulars:

Length overall .....	28 ft.
Length of cab .....	24 ft.
Width of cab .....	7 ft.
Height to top of cab .....	10 ft. 8 ins.
Wheel base .....	6 ft. 6 ins.
Wheel diameter .....	33 in.
Track gauge .....	4 ft. 10 $\frac{1}{8}$ in.
Devil strip .....	5 ft. 4 ins.



## The Jitney Situation in Canada.

Within a little over three months the jitney automobile has been introduced into six out of the nine Provinces in Canada, and while at present only nine cities are affected, others are taking steps to make regulations which will control the traffic effectively from the start. The difficulties with which many of the cities, not only in Canada, but in the United States, have to contend in connection with the traffic is due to the fact that when jitneys did start there was no real power to control them, and the traffic became to some extent established before the necessity of regulation became apparent. General authority to regulate the traffic has been conferred on municipalities by the British Columbia Legislature, and the Saskatchewan Legislature has been asked to give its cities regulatory power over motor vehicles. Some Ontario cities, Edmonton, Alberta, and Winnipeg, are acting, or preparing to act under the general powers of these charters to make regulations for this traffic.

The amendments made in the Municipal Act, by the British Columbia Legislature, include a new subsection to sec. 54, giving power to municipalities to make regulations for licensing and regulating motor vehicles carrying passengers; by limiting the number of passengers to be carried; by defining the routes upon which the vehicles may run; for limiting the hours within which they may be operated; to compel the owner or driver to furnish bonds, and for the licensing and regulating of chauffeurs. The terms of the legislation secured by the city of Vancouver were given in last issue on pg. 150. Under the terms of this power a committee of the City Council drafted a series of regulations. At a meeting of the City Council to discuss the proposed regulations, it was stated that 140 men had been laid off by the British Columbia Electric Ry., and that there were more than 300 jitney drivers in the city. The draft regulations were amended in a number of details. A jitney inspector is to be appointed by the city. Another organization, the Jitney Association of Vancouver, was formed Mar. 30, with A. E. Goodman as chairman, and a large membership. For the interurban service between Vancouver and New Westminster, the Kingsway Motor line has been started. The company, the manager of which is J. Insley Jr., New Westminster, proposes to give a 15 minute service between 8 a.m. and 8.30 p.m., and a 30 minute service after the latter hour.

The first regular jitney started business in Edmonton, Alberta, Mar. 15, as stated in Canadian Railway and Marine World for April, and Superintendent Larmonth, of the Edmonton Radial Ry., in replying to the Commissioners, April 6, said: "We are having a good deal of competition from the jitney busses on the south side, although they have practically gone out of business on Jasper Ave. West." The south side routes go across the high level bridge, and on April 10 four jitney drivers were fined for exceeding the speed limits. The Edmonton City Council, on April 6, gave the first reading to a bylaw to regulate jitney traffic. The provisions include licensing of cars and drivers, car licenses at from \$60 for a five passenger car to \$150 for one carrying more than 10 passengers, with \$2 for driver's license. There is to be a license inspector who is to have general supervision over the traffic. The license is to specify the route upon which the car is to be run, the fares to be charged, etc., and the other regulations provide for the character of the car and its equipment; the operation of the car, etc. The penalty for violating any of the regulations may be

\$100, and if the magistrate so orders the cancellation of the license. Owners and drivers must put up a bond for \$10,000 each, as a guarantee against accident claims.

Up to April 25 no jitneys were in operation in Calgary, Alberta.

Representatives of Saskatchewan cities met at Regina, April 8, to discuss civic problems, one of which was the coming of the jitney. Commissioners Pool, Regina, and Yoarth, Saskatoon, were responsible for the passing of a resolution asking the Legislature at the next session, which opens in May, to grant all municipalities power to regulate the traffic, routes and hours of any automobiles or other vehicles used for the transportation of passengers, where a fare of 10 cts. or less is charged. It was explained that it is desired that any one desiring to operate such a service should apply to the civic authorities, when routes could be arranged and schedules of fares and lines drawn up.

A service, controlled by A. W. Beise, is being given between Pleasant Hill and Mayfort, Saskatoon, Sask., and arrangements are being made for putting cars on other routes. A seven minute service is being given in competition with a section of the municipal railway.

The Mayor of Winnipeg is reported to have said, April 8, that the City Council must take immediate action respecting the jitney traffic in the city, and that jitney owners, or drivers, or both, must be made responsible for accidents by means of a bond guarantee. This statement was evidently made in consequence of the recommendation of the jury at the inquest upon the body of Mrs. Friedereich, who died as the result of being struck by a motor car, April 5, to the effect "that all drivers of jitneys, whether owners or chauffeurs be required to pass an examination before being given a license. Another reason for the special regulation of the jitney traffic is the increase of breaches of the traffic bylaw. For example, on Mar. 31, there were 48 such offences dealt with in the police court, the majority of which originated at the intersection of Main Street and Portage Ave., the principal starting point used by the jitneys for their trips. One press report states that there are over 200 jitneys being run in Winnipeg, and that the number is increasing daily. This has resulted, according to a report of April 8, in the taking of 22 cars from several routes by the Winnipeg Electric Ry. It was reported, April 10, that over \$50,000 had been paid to the Municipal Commissioner in the previous nine days for auto licenses, many of which were being used for jitneys. A motor-cycle jitney has been running in the city since April 1, having a capacity for six passengers and being operated by an eight horse power engine. The Winnipeg Jitney Association has been established, and is arranging with an insurance company to carry a general policy to cover accidents.

The Winnipeg Electric Ry. applied to the Manitoba Public Utilities Commission, April 16, for permission to cut down its service in the city by taking off 20 cars. Counsel for the company stated that the number of passengers carried during March was 4,419,031, against 4,992,593 in Mar., 1914, and 4,884,609 in Mar., 1913, while in the first 12 days of April there had been a drop of nearly 400,000 in the number of passengers carried, as against the first 10 days of April, 1914. The company had been promised the sole franchise for carrying passengers along the city streets, and the city is now encouraging the jitney business, which simply angles after business during the fine weather, dropping out altogether when rain and

the cold weather comes. Counsel for the city stated that all possible information regarding the jitney business is being collected, with a view of preparing a bylaw approving regulations for its control in the city. The city does not object to the present reduction of cars, provided a precedent is not established. The Commissioner's decision was reserved.

The Mayor of Port Arthur, Ont., called the attention of the City Council, Mar. 30, to the probability that a jitney service would be inaugurated there, and it was mentioned that there was already a "jitney" freight service in operation between Port Arthur and Fort William.

The Stratford, Ont., city authorities have been approached with the view of a license being obtained for the operation of a jitney service in that city.

At a meeting of the Hamilton, Ont., Board of Control, April 2, the Mayor said a bylaw was being prepared for consideration giving the police the necessary authority to regulate the jitney business. One of the Controllers complained of the overcrowding and high speed of the cars in the service. There are two concerns operating jitneys in the city: The Hamilton Jitney Co., with a capital of \$40,000, with which, C. V. Langa, A. Carey, F. W. Reinke, L. H. Alley and G. S. Carey are associated, and the Hamilton Jitney Service Association, of which A. A. Decker and C. M. Wilson are the principal members, with C. W. Bell as Secretary.

Representatives of the Hamilton Jitney Association had an interview with the Mayor, April 20, in the course of which he explained what the Association was doing in the way of controlling and regulating the new traffic so as to ensure the safety of the public. There are, he stated, 40 jitneys being operated in the city, the majority of the owners of which are members of the association. The association drafts routes, arranges schedules, supplies tickets, fare boxes, looks after receipts, looks after the drivers, maintains a supply store for the sale of gasoline, etc., charging for its services \$2.50 a week per car. An arrangement is being negotiated for insurance against accidents, as a protection to the public. The Mayor stated that the matter would be taken up with the Council committees, and such regulations would be made as might be found necessary.

A meeting of business men in Brampton, Ont., April 15, discussed a project for starting a jitney service from Brampton to Weston, to connect with the Toronto Suburban Ry. there, as a means of securing more frequent connection with Toronto than is provided by the G.T.R. and the C.P.R., and as a feature in the campaign which has been going on for the past seven years to induce these companies to grant commutation fares between Brampton and Toronto. The project also contemplates the putting on of a jitney to run to Meadowvale, as soon as the Toronto Suburban Ry.'s extension from Lambton to Georgetown is put in operation.

The first "jitney" made its appearance in Ottawa, April 5, the car being labelled "Jitney Passenger Service, Bank and Rideau Streets, fare 5 cents." C. Levesque, who owns the car, is reported to have said he can make 30 round trips in the day, and can carry seven passengers at any one time. Other motors are now reported to be running on other routes, but up to the time of writing the city police authorities have not been asked to issue any licenses. At the meeting of the Brotherhood of Teamsters, Chauffeurs, etc., held in Ottawa, April 10, the General President stated that the jitney drivers were being organized wherever there was any number of them, and associations of jitney drivers had already been formed at Victoria and Winnipeg.

A jitney bus service was started in Mont-



real, April 12, and according to a statement made by R. Spaulding, Vice President of the Jitney Association of Montreal, the following day there were seven cars in operation and arrangements were being made for an increasing number, it being expected to have at least 100 in operation by May 1. The principle on which the service is operated is that a fee of \$2.50 a week per car is paid to the Association; the balance being divided 40 per cent to the operator, and 60 per cent. to the owner of the car. The Association has a set of rules governing the service, the time schedule at present being 7 a. m. to 7 p. m., day service, and 7 p. m. to 11.30 p. m., night service. The officers of the Association are: President, E. P. Gordon; Vice President, R. Spaulding, Secretary-Treasurer, L. L. Gordon; General Traffic Manager, G. H. Pearsall. The City Council has drafted a bylaw which proposes to regulate motor traffic in such a way that all such vehicles plying for hire will have to go on stands.

The jitney service in Montreal is being rapidly extended, not only in the city, but also in the suburban districts. Motor owners possessing touring cars, which they ran as taxicabs, are joining the Jitney Association, and are being assigned routes. The number of routes is being increased, while special services are being organized for Sundays, as for instance, April 18, six cars were put on a route round Mount Royal, each making six trips. Another development is a special car service in the residential districts for shopping and visiting, for women only. For this service there are already applications by women for positions as drivers.

In Halifax, N.S., a person has applied to the City Board of Control for permission to run a jitney service and it was referred to the city solicitor for report as to whether or not such a service would interfere with the Halifax Electric Tramway Co.'s rights.

The jitney situation in Toronto is dealt with in a separate article.

### Calgary Municipal Railway Matters.

The results of operation for the calendar year 1914 were as follows:

Revenue.	
Car earnings .....	\$680,197.71
Miscellaneous earnings .....	10,811.12
Bank interest .....	11,521.43
	\$702,530.26
Expenditure.	
Maintenance way and structures ....	\$ 14,671.52
Maintenance of equipment .....	60,772.19
Transportation .....	398,337.05
General expenses .....	41,298.10
Taxation .....	3,373.41
Rental land and conduits .....	1,010.91
Debt interest .....	106,359.48
Debt sinking fund .....	41,478.77
Depreciation .....	29,399.33
Bad debt .....	1,997.30
Surplus to old revenue account .....	3,831.60
	\$702,530.26

#### Miscellaneous Statistics for 1914.

Passengers carried .....	16,213,731
Car miles operated .....	3,112,407
Car hours operated .....	347,801
Car earnings per car mile .....	21.854 cts.
Miscellaneous earnings per car mile ..	0.347 cts.
Gross earnings per car mile .....	22.201 cts.
Car earnings per car hour .....	\$1.95
Miscellaneous earnings per car hour ..	0.03 cts.
Gross earnings per car hour .....	\$1.98
Operating expenses per car mile .....	16.549 cts.
Operating expenses per car hour .....	\$1.48
Proportion operating expenses to operating revenue .....	74.5%
Average fare .....	4.195 cts.

Following are the expenses and revenue for March, 1914 and 1915. The deficit is made up of debt interest, sinking fund, depreciation, taxes, etc.

	March, 1915.	March, 1914.
Operating expenses .....	\$32,195.54	\$47,480.43
Overhead and fixed charges .....	16,635.28	15,121.76
	\$48,830.82	\$62,602.19

Operating revenue .....	46,157.22	56,606.70
Deficit .....	\$2,673.60	\$5,995.49

Following are the operating results for the first three months of 1914 and 1915, Jan. 1 to Mar. 31, both inclusive, which notwithstanding largely decreased earnings, show a great reduction in the deficit:

	1915.	1914.
Operating Expenses ....	\$ 93,495.61	\$145,117.88
Overhead and fixed charges .....	49,855.77	45,365.26
	\$143,351.38	\$190,483.14
Operating revenue .....	135,965.98	166,310.85
Deficit .....	\$7,385.40	\$24,172.29

The contingent and accident accounts (2% of gross earnings) have only been provided for 1915, had the same provision been made in 1914 the deficit for the three months would have been \$27,498.50.

The Calgary City Commissioners have refused to consider a proposition to lay a street railway track connection between the C.P.R. and the G.T. Pacific Ry. on North Ave. E., for car switching purposes, the switching to be done by the Calgary Municipal Ry.

The Calgary City Council is being asked by its legislative committee to abolish transfers on the municipal railway and to charge a straight five cent fare.

### Ontario Ends the Building of Interurban Railways by Private Capital.

The position of a number of electric railways in Ontario was considered during the recent session of the Ontario Legislature, and as the result of the discussions, the extensions sought by the Toronto and York Radial Ry. of time to complete already authorized lines, and power to build a new double track line from its southerly terminus to the northern bounds of Toronto, was refused; while the applications of the Forest Hill Electric Ry., the Ottawa and St. Lawrence Ry., and the Eastern Ontario Electric Ry., which were in the organization and pre-construction stage, were rejected, thus terminating their existence. The Forest Hill Electric Ry., proposed to build a line in North Toronto, between the Yonge St. and Bathurst St. districts, the Ottawa and St. Lawrence Electric Ry. had already graded some miles in Russell tp., of its 300 miles of projected lines to connect Ottawa, Morrisburg, and other points, in the north-eastern triangle of Ontario, bounded by the Ottawa and St. Lawrence rivers, and the Eastern Ontario Electric Ry., was originally authorized to build lines from Cornwall to Toronto and from Ottawa to Brockville, with branches.

The opposition to the extension of all these charters came from the Hydro Electric Power Commission of Ontario, through its chairman, Sir Adam Beck, M.L.A. for London, who appeared before the railway committee of the Legislature and explained the policy of the Commission in reference to electric railway construction. The commission has power under the act of 1914 in co-operation with the various municipalities to build electric railways anywhere in the Province, wherever the power lines of the Commission exist or may hereafter be carried. In the section east of Toronto, a number of municipalities have voted to raise funds by debentures for such construction, and municipalities in many other parts of the Province are investigating the matter. The Commission desires to have a free hand in dealing with the whole question, and it is claimed that its action would be considerably hampered if the charters above mentioned intervened. As a result of Sir Adam's representation the Legislative Committee refused to recom-

mend the passing of the bills, and they were thrown out.

The general position taken by the Commission was outlined by Sir Adam, at a meeting of the Hydro Electric Railway Association of Ontario, held at Toronto, a report of which appeared in Canadian Railway and Marine World for April. It was further stated in a meeting at Ottawa, April 6, at which representatives of municipalities lying between the Ottawa and St. Lawrence rivers were present, covering a great deal of the area proposed to be served by the Ottawa and St. Lawrence Electric Ry., and the Eastern Ontario Electric Ry. At that meeting Sir Adam said: "If the people in any part of Ontario want a radial railway then they can have it." He added all that it would be necessary to do would be that the representatives of the municipalities should get together and pass resolutions asking the Commission to investigate, and give an estimate of the cost. Then the matter would be voted upon, and if the vote was favorable, municipal debentures would be issued, and the Commission would build the lines. The debentures would be guaranteed by provincial bonds, which would be liquidated by the revenues of the lines and by a tax on the municipalities if the revenues were not sufficient. The Provincial Government should subsidize the lines to the extent of \$3,500 a mile, and the Dominion Government had been asked for subsidies of \$6,400 a mile, but even if these subsidies were not forthcoming, the lines would be built if the municipalities were willing to assume the full liability.

### Edmonton Radial Railway Matters.

The Edmonton, Alberta, Property Owners' Association discussed the electric railway situation in the city at a general meeting on April 7. J. McBride moved that if the city failed to relieve the taxpayers of the monthly recurring deficits on the line within 60 days, the Association should take steps to restrain the city from operating the system. The motion did not meet with much encouragement. J. Chalmers, a former city commissioner, explained many details of operation and administration and expressed the belief that the appointment of an independent commission to operate the railway for a long term was the only real solution of public ownership ills. The general sense of the meeting was in favor of public ownership of all utilities, and that, in regard to the electric railway, a special commission should be appointed to thoroughly investigate the distribution of capital expenditure, the basis upon which depreciation charges are fixed, the present routing of cars, the possibility of the further reduction of charges for power, and the advisability of a revision of fares to secure increased traffic.

The City Council, on April 6, passed a resolution giving Superintendent Larmonth a free hand in the management of the Edmonton Radial Ry. until Aug. 1. This resolution was passed on the following recommendation of the street railway operation committee: "Your committee are of opinion that, under the conditions under which the street railway has been operated, Mr. Larmonth has not had an opportunity to make a good showing. We therefore recommend that he be given an entirely free hand until Aug. 1, and that at that time the matter be again brought to the attention of the council. Your committee also are of opinion that the Superintendent would be well advised to use the street cars in preference to the department's automobile."

A new schedule for the operation of cars was put in operation, April 5, which gives a faster service on a number of routes.



## Electric Railway Projects, Construction, Betterments, Etc.

**Brandon Municipal Ry.**—A press report states that the Brandon, Man., City Council has decided to connect the two dead ends of the Municipal Ry. with 22nd St., at a cost of \$16,500. (Jan., pg. 28.)

**Brantford and Hamilton Electric Ry.**—The Dominion Parliament has granted an extension of time for building the projected line from Langford, on the present line, to Galt, Ont. (Mar., pg. 108.)

**Brantford Municipal Ry.**—The commission is rebuilding the track in Brantford, Ont., to the south of the canal and extending it so as to take in the Cockshutt, Verity and Adams factories and in addition complete a loop to enable one-way cars to be run. It is expected to have the work completed by the end of May.

Ties for the betterment of the Grand Valley Ry. have been delivered at Blue Lake, and their laying will be started at once. (April, pg. 147.)

**British Columbia Electric Ry.**—The General Manager wrote the Vancouver City Council, April 7, that the proposed construction of tracks on Cambie and Main streets with the Harris-Georgia St. viaduct must remain in abeyance for the present. (Mar., pg. 108.)

**Edmonton, Stoney Lake and Wabamun Ry.**—The Alberta Legislature has granted an extension of time for building this projected electric railway from Edmonton to Stoney Lake and then on to Wabamun. (Sept., 1913, pg. 443.)

**Elbow River Suburban Ry.**—The Alberta Legislature has granted an extension of time for building this projected railway from the junction of Canyon Creek and Elbow River, skirting the Sarcee Reserve, and into Calgary. (April, 1913, pg. 185.)

**Hamilton Mountain Electric Ry.**—The Ontario Legislature has granted an extension of time for the building of this projected electric railway from the Hamilton Mountain Road, Ancaster Tp., to Ryckman's Corners, at the Hamilton and Caledonia Road, three miles. (March, pg. 108.)

**Humber Valley Electric Ry.**—An extension of time has been granted by the Ontario Legislature for building this projected railway, along the Humber River from Bloor St., to Lake Shore Road, Toronto. (Feb., pg. 70.)

**London and Port Stanley Ry.**—It is expected that this line will be completely electrified, so as to permit of its opening as an electric railway on July 12.

**Montreal and Southern Counties Ry.**—The Dominion Parliament has granted an extension of time for the completion of the various lines authorized. The line from St. Cesaire to Granby, about 16 miles, is approaching completion. It was put under contract in May, 1914, and grading was completed in Oct., 1914. It is expected that the line will be completed and put in operation during the summer. (Mar., pg. 108.)

**Montreal Tramways Co.**—The agreement which may be entered into with the town of Mount Royal, provides that a 20 years franchise be granted for a street railway service within the limits of the town, under and on the surface of the streets. The terms and conditions of the franchise to be fixed by agreement, or in default, by the Quebec Public Utilities Commission. The period within which the agreement may be made is extended for five years from Mar. 5. The agreement, which may be made between the town and the Montreal Public Service Corporation, is for the supply of light and power within the town.

Controller Duncan McDonald submitted to the Montreal Board of Control, Mar. 28, a proposition for a new agreement with the M. T. Co., making four propositions now under consideration. The Board decided to take up the consideration of all the proposals, and has been doing so at its various meetings since, but does not appear to be making very much progress. (April, pg. 148.)

**Niagara, Welland and Lake Erie Ry.**—The Ontario Legislature has confirmed the agreement made between the company and the town of Welland, a summary of which was given in our last issue. (April, pg. 147.)

**Ontario Hydro Electric Railways.**—The Ontario Legislature during the recent session directed that a return be prepared as to requests made by the Lieut.-Governor-in-Council to the Hydro Electric Power Commission, under the provisions of sec. 3 of the act of 1914 to enquire and report upon the proposed electric railways in Ontario; what enquiries had been held; what reports had been presented as a result, and whether approval had been given for the building of any electric railways. (April, pg. 143, and Mar. pg. 108.)

**The Sandwich, Windsor & Amherstburg Ry.** is reported to have offered to build a belt line via Lincoln Road and Ottawa St., to be in operation by Oct. 1, if the Windsor, Ont., City Council will extend the franchise for 12 years.

**Three Rivers Traction Co.**—Press reports state that construction is to be started at an early date on this projected six mile line, centring in Three Rivers, Que. (Mar., pg. 108.)

**Toronto, Barrie and Orillia Ry.**—The Ontario Legislature has granted an extension of time for the building of this projected railway in Barrie, northerly to Orillia, and southerly to Toronto. The only portion of the line outside Barrie upon which surveys have been made is as far as a junction with the C. P. R. Toronto-Sudbury line at or between Udney and Baxter. (Mar., pg. 108.)

**Toronto Eastern Ry.**—The Dominion Parliament has granted an extension of time for the building of the line from Toronto to Cobourg, Ont., with its projected branches to Peterborough, Markham, Stouffville or Uxbridge, Lindsay, and to the Lake front near Oshawa. (Feb., pg. 71.)

**Toronto Suburban Ry.**—Ties are being laid on the extension of the line to Georgetown, and Guelph, Ont., easterly from Islington towards Lambton. The first stop will be at the steel bridge across the Mimico Creek, and when this single span has been put in track will be laid to the Humber, at which point the piers for the steel bridge are about one-third complete. At other parts of the line to Georgetown, ballasting, and overhead construction work is going on, while beyond Georgetown, the grading is being completed. The Georgetown section is expected to be ready for operation by August. (April, pg. 147.)

**Transcona.**—A proposition for the building of an electric railway in Transcona, Man., has been submitted to the Council by H. W. Adcock, Winnipeg. Another proposition from W. J. Christie & Co., Winnipeg, to build a line from the corner of Oxford and Regent Sts. to the western limits of Transcona, and to connect with the Winnipeg Electric Ry. on Talbot Ave., Elmwood, was laid before the council, April 15, and it was stated that the line could be completed within three months after a franchise was granted.

In regard to the franchise which was

granted a year or so ago to J. H. Kern for building a line in Transcona, we are advised that the necessary legislation has been passed and awaits final action to rescind the contract and throw the matter open for competition. (April, pg. 147.)

## Brantford Municipal Railway Operating Results

The commissioners, C. H. Hartman, W. R. Turnbull and A. K. Burwell, have presented a report on the operation of the lines from Aug. 5, 1914, when possession was obtained from the receiver, to Dec. 31, from which the following are extracts:

Operating revenue .....	\$33,411.91
Operating expense .....	25,506.85
	<hr/> \$7,905.06
Sufficient to pay—	
Interest on bonded debt .....	2,692.75
Interest on advances by city .....	2,666.32
Taxes, including city, except instalment of principal due in 1914 on pavement debt .....	2,545.99
	<hr/> \$7,905.06

This instalment on pavement debt has been charged to capital, but the commissioners hope to meet future instalments out of earnings.

### ASSETS.

Property taken over from receiver, less old material sold .....	\$294,899.91
Improvements and betterments by commission .....	64,233.57
Cash, stores, etc. ....	8,996.42
	<hr/>
Valued on the basis of cost .....	\$368,129.90

### LIABILITIES.

Advances by city .....	\$135,000.00
Ordinary accounts, etc. ....	40,558.16
Mortgages .....	2,400.00
City current account for taxes, etc., due by old company plus sundry other items .....	28,548.28
Bonds, due July 1, 1932 .....	125,000.00
Pavement instalments to mature ...	36,623.46
	<hr/>
	\$368,129.90

The first two items of liabilities, aggregating \$206,506.64, will be paid out of the proceeds of bonds for \$270,000 authorized to be issued by the city, leaving a balance of \$63,493.36 for extensions and improvements. Out of this the following appropriations have been made: Paris station, \$1,500; Paris hydro station, \$4,500; improvements to Grand Valley cars, \$14,000. The balance, some \$40,000, is to be used for remodelling old power house for terminal station; rebuilding Eagle Place line and extending same to provide for loop; new cars for Eagle Place, and Holmedale section; improvements to Grand Valley track; terminal at Galt. Payment for these will exhaust the money available, and before further extensions and improvements can be undertaken more funds will require to be provided.

**Union Station for St. Paul.**—The reconstruction and rearrangement of the union passenger station at St. Paul, Minn., has been under consideration for several years. The adoption of definite plans has been delayed by the difficulty of effecting agreement between the nine railway companies and the municipal and other interests involved. The burning of the old station building on Oct. 3, 1913, gave an unexpected impetus to the work. In Jan., 1915, plans for a new station and terminal were submitted to the city authorities by the St. Paul Union Depot Co., which owns the terminal property and in which the several railways are represented. These plans have been approved by the city council. The total cost of the project is estimated at \$15,000,000.

G. H. Stagg has been appointed Travelling Passenger Agent, Niagara Gorge Rd., with office at Buffalo, N.Y.



## Mainly About Electric Railway People.

**Garrett Pettingill**, Superintendent, Winnipeg, Selkirk & Lake Winnipeg Ry., Selkirk, Man., is convalescing after an attack of smallpox.

**E. P. Coleman**, General Manager, Dominion Power & Transmission Co., has been elected President of an architects and engineers' club which has been established in Hamilton, Ont.

**Col. H. H. McLean, K.C., M.P.**, President, St. John Ry., St. John, N.B., will probably be in command of one of the divisions now training for service with the Canadian Overseas Forces.

**J. S. Mackenzie**, Purchasing Agent, Winnipeg Electric Ry., visited Toronto recently to attend the celebration of his parents' 50th wedding anniversary. He also visited his old home at Kirkfield, Ont.

**Sir Adam Beck, M. L. A.**, Chairman of the Hydro Electric Power Commission of Ontario, left London, Ont., April 20, for France in connection with the supply of horses for the Canadian Overseas Expeditionary Forces.

**S. L. Prenter**, who for the past six years has been connected with the British Columbia Electric Ry.'s transportation department, at Vancouver, was presented with a suite of library furniture by the head office staff, April 3, on leaving the service.

**Edward Garrett**, Superintendent, Park & River Division, International Ry., Niagara Falls, Ont., who was born at Cataragui, Ont., May 24, 1868, is one of six sons of the late Albert Garrett, who was in charge of laying the first steel on the G.T.R. out of Montreal, about 1850.

**Martin N. Todd**, President, Galt, Preston & Hespeler St. Ry., has also been appointed General Manager, Lake Erie & Northern Ry., vice W. P. Kellett, resigned. This line, which is under construction between Galt and Port Dover, Ont., via Paris, Brantford and Waterford, and which will be 51 miles long, has been leased to the C.P.R. It is being built as a steam road, but will probably be electrified.

**C. Balmer Jr.**, Chief Electrician, Chatham, Wallaceburg and Lake Erie Ry., was killed, Apr. 2, by electrical shock, while making some repairs at one of the Chatham, Ont., theatres. At the inquest the evidence showed that he received a 240 volt current, which, it was stated, was not considered dangerous for a normal man. The verdict was to the effect that death was caused by his being electrocuted by accidentally coming in contact with the blades of an electric switch.

**Herbert John Somerset**, who died in Toronto, April 11, from pneumonia and pleurisy, after three weeks illness, was a son of the late J. B. Somerset, at one time Superintendent of Education for Manitoba, and was born in St. Catharines, Ont., in 1870. He graduated from the Worcester Polytechnic Institute in 1891, receiving the degree of B.Sc., in mechanical engineering. In the following year he took an expert course with the Canadian General Electric Co., at Peterborough, Ont. In 1894 he received an appointment from the Winnipeg Electric St. Ry., and was Manager up till 1899, when he went to Australia. For the next 13 years he was Manager, Engineer, and Local Director of the Perth Electric Tramways, Ltd. He was also consulting Engineer for the Kalgoorlie Tramways Co., the Kalgoorlie Power & Lighting Co., and the North Melbourne Tramway & Lighting Co., Ltd. After successfully negotiating the sale of the Perth Tramways to the West Australian Government for the London directors, he spent a few months in England, returning to Canada in 1913.

## Saskatoon Municipal Railway Matters.

A statement submitted to the City Council by the Commissioners of Public Utilities, shows that the deficit on the Municipal Ry. for the two months ended Feb. 28, was \$7,900.84.

**R. B. Hamilton**, of Winnipeg, who was appointed Superintendent, Saskatoon Municipal Ry., recently, informed the City Council that he could not accept the position at the salary offered—\$150 a month, but suggested that he be appointed for one year, at \$150 a month for six months and \$175 a month thereafter. The Council decided to adhere to its original offer, which he definitely declined, April 6.

The City Council is considering a proposition for the operation of the spur lines on the Municipal Ry. by one man, instead of two as required by statute, which the Legislature is to be asked to amend. It was stated that all cars in Brandon, Man., and cars running on spur lines in Edmonton and Lethbridge, Alberta, were operated by one man.

## Electric Railway Notes.

The Winnipeg Electric Ry., in the calendar year 1914 issued 20,277,197 transfers, an increase of 5,238,181 over 1913. We are advised that this was on account of a rerouting of cars.

The Moose Jaw, Sask., Electric Ry. has made a further cut of 5 per cent. in wages, laid off 11 more men, and reduced the car service on the east and west routes. This makes a total cut of 15 per cent. in wages, and the reduction of the staff by 17 men.

At a meeting of representatives of Saskatchewan cities held in Regina, April 8, a resolution was adopted asking the Legislature to amend the City Act, in such a way that electric cars on all lines, on Sundays, and cars on the less important lines on week days, may be operated by one instead of two men as at present.

The City of Toronto is being sued by John Mackay and Co., auditors and accountants, Toronto, for \$42,546.50, for services rendered and disbursements, in connection with a report on the proposal to purchase the Toronto Ry. and Toronto Electric Light Co., which eventually fell through. The City Council has disputed the amount on the ground that the firm was not properly engaged to make the report, and that the Mayor was not authorized by the Council to make such an arrangement as is claimed to have been made.

**Detroit's Transportation Problems.**—Barclay Parsons & Klapp, New York, retained as consulting engineers by the Board of Street Railway Commissioners of Detroit, Mich., to study street railway traffic conditions and the possible necessity for a subway, have made an elaborate report. The larger part deals with the street railway traffic congestion caused by the convergence of car lines to a central interchange district. To relieve the congestion they recommend rerouting of the main radial lines in such a way as to loop through the interchange district without mutual interference, two-car rush hour trains and station stops on the heaviest line, and many minor changes. For the future it is to be anticipated that the city's growth "will in time make demands beyond the possible limits of surface street car transportation." As first relief a short street car loop subway is recommended. For a still later period, a long subway with independent train service is suggested.

## Electric Railway Finance, Meetings, Etc.

## British Columbia Electric Ry.

	Jan. 1915	Jan. 1914	July 1, 1914 to Jan. 31, 1915	July 1, 1913 to Jan. 31, 1914
Gross earnings	\$640,495	\$777,102	\$4,639,394	\$5,330,828
Expenses	497,170	561,146	3,671,738	3,983,467
Net earnings	143,325	215,956	1,067,656	1,437,361

The percentage paid to the City of Vancouver for the first quarter of this year was \$5,398.51, against \$10,870.58 for the same period 1914. The amount paid for March was \$2,167.83, against \$4,674.08 for March, 1914. The number of passengers carried over the city and suburban lines in March was 1,912,510, against 3,273,774 for March, 1914.

## Cape Breton Electric Co.

	Feb. 1915	Feb. 1914	Two months 1914	Two months 1915
Gross earnings	\$23,439.01	\$25,284.98	\$52,493.07	\$55,083.0
Expenses	15,059.10	15,697.72	32,841.48	34,260.97
Net earnings	8,379.91	9,587.26	19,651.59	20,822.32

## London St. Ry.

	Feb. 1915	Feb. 1914	2 months 1915	2 months 1914
Gross	\$29,231.28	\$25,896.07	\$50,847.33	\$54,250.22
Expenses	20,794.78	18,907.66	42,313.40	38,761.30
Net	8,436.50	6,988.41	17,533.93	15,488.98

## Lethbridge Municipal Ry.

	Feb.	March.
Receipts	\$ 3,438.65	\$ 3,494.36
Passengers carried	70,167	70,817

**Moncton Tramways, Electricity and Gas Co.**—The directors for the current year, as re-elected at the annual meeting recently, are as follows.—**R. Law**, President; **E. B. Reeser**, Vice President and General Manager; **E. O. Bartlett**, Secretary; **H. C. Stewart**, Treasurer, all of Pittsburg, Pa. **A. B. Coryell**, Moncton, N.B., is Superintendent of Tramways and Electricity and Purchasing Agent.

**Toronto Ry., Toronto and York Radial Ry. and allied companies.**

	Jan., 1915.	Jan., 1914.
Gross earnings	\$843,351	\$847,945
Expenses	440,500	440,337
Net earnings	402,851	407,608

Gross receipts for the Toronto Ry. for March, \$488,468, against \$510,751 for March, 1914. The city percentage was \$93,141, a decrease of about \$9,000. Total receipts for three months ended March 31, \$1,400,008, a decrease of about \$73,000 from the same period 1914.

## Winnipeg Electric Ry.

	Jan., 1915.	Jan., 1914.
Gross earnings	\$350,681	\$382,670
Expenses	214,205	226,177
Net earnings	136,476	156,493

## Proposal to Buy Municipal Railways.

Practically simultaneous offers were made at the end of March, through Caldwell, Mills & Co., Solicitors, Moose Jaw, Sask., to purchase the municipally owned electric railways in Regina, Sask.; Calgary and Edmonton, Alberta. The letters stated that they desired to know on behalf of clients if the cities would be willing to consider selling out their electric railway systems, and granting a franchise to the clients on whose behalf they were acting. Edmonton City Council, Mar. 23, directed a reply to be sent in the negative, an example which was followed by Regina and Edmonton.

**Detroit United Ry.**—It was announced, April 2, that the stockholders had authorized the directors to accept the offer of the Detroit, Mich., City Council of \$24,900,000 for the company's lines within the city. This amount represents the mortgage debt on the lines, which indebtedness the city will assume. There are a number of minor details to be settled before the transfer can be made. The D.U.R. retains its suburban lines in Michigan, and its ownership of the Sandwich, Windsor and Amherstburg Ry., with its subsidiary, the Windsor and Tecumseh Electric Ry. in Canada.



## The Jitney Situation in Toronto.

The operation of jitneys in Toronto is experiencing a sudden boom, each day seeing an increased number of cars in service. It appears that the first jitney car operated in Toronto was owned by W. D. Gregory, of Gregory and Gooderham, barristers. As an alternative to laying up his car and dismissing the chauffeur, it was suggested to him by his son, G. Gregory, a law student, that the car be placed in jitney service in the Rosedale residential district. This was done Feb. 22, and as a result four of the largest automobile dealers, Hyslop Bros., McLaughlin Carriage Co., Russell Motor Car Co., and Ontario Motor Car Co., approached G. Gregory, who was looking after the operation of the original car, with the result that each of the four dealers provided three large cars to form the nucleus of an operating association, which was named the Toronto Jitney Association, with offices at 102 Church St. This association comprises G. Gregory, who is Manager; A. T. Crowther, Manager of Commercial Electrics, Ltd.; B. M. Tate, of the Tate Electrics, Ltd., and J. W. Bicknell.

The association commenced operations on Mar. 17, with cars operating on Yonge St. from Front St. to the city terminal of the Metropolitan division of the Toronto and York Radial Ry., about 2 miles, the fare charged being 5 cts., with tickets at 6 for 25 cts. The service has since been extended, so that at the middle of April the association had over 60 cars in operation. The principal run is the Yonge St. line as mentioned above. From the northern terminus of this latter run, other cars of the Association run as far north as Bedford Park, on the Toronto and York Radial Ry., charging a 10 ct. fare, with a 5 ct. fare to Glen Grove, about half way. Occasional cars make the trip from the lower portion of the city to Glen Grove. The original Rosedale line operated by Mr. Gregory is still operating with additional cars. There are also two cars operating under the association from the corner of King and Yonge Sts. to the Kingston road on King and Queen Sts. east. These lines are all that are normally operated by the association through the day, but after 9 p.m., a number of the cars operating on the other lines are placed on a King st. West service to Sunnyside, through the South Parkdale residential district. Other lines are in contemplation.

The Toronto Jitney Association is merely an operating organization, composed of the four men mentioned. The cars operated are owned by individuals, who place the car in the Association to be operated, the duties of the latter consisting of arranging the routes and superintending the operation. The full responsibility for the operation rests on the owners, however, the chauffeur being in all cases employed directly by the owner, and in cases where the owner requires a chauffeur for a car he desires to operate in this way, the association merely acts as a clearing house to place the owner and chauffeur in touch with each other. The association purposes arranging for the co-operative purchase of supplies, such as gasoline and oil, and possibly for tires and other requisites.

The fare collections are handled directly by the association, each chauffeur being supplied with a small fare box and tickets. The fare boxes are taken in daily, and the receipts counted in the association's office. The use of tickets was discontinued towards the end of April. Some of the chauffeurs operate the cars on a straight wage from the owner, but the majority receive as their compensation 40% of the net operating receipts, after deducting for

gasoline and oil, but not for tires, repairs or depreciation, which falls entirely on the owner. The association maintains a motor cycle inspector, who looks after the proper working of the schedules, etc. For the privilege of operating under the name of the association, the car owners pay \$2.50 a week, but this amount is to be materially reduced in the near future. The association is applying to the Ontario Government for a \$40,000 charter, with power to own and operate motor busses.

The Toronto Jitney Association has been the largest jitney operating organization in Toronto to date. At different points throughout the city, individual owners have gone into the business independently, but after a short period, the majority have become converts to the association idea, and have joined the Toronto Jitney Association.

The Canadian Jitney Association, with offices in the Mail Building, is organized along almost identical lines with the Toronto Jitney Association, and commenced operation on April 15 with 4 cars, which were placed on the Yonge St. line in competition with Toronto Jitney Association's cars. It is said that other lines are to be opened shortly, the West Toronto field being under consideration for exploitation. A. G. Blain is Manager and I. J. Ardagh is Secretary-Treasurer of the Canadian Jitney Association, which is applying to the Dominion Government for a charter. The general manner of operation is to be similar to that of the Toronto Jitney Association.

Some independently operated cars have been in operation in West Toronto, but the West Toronto Jitney Association is being formed, in which J. A. Duffin, clothier and furnisher, 1676 Dundas St., is interested. It proposes operating jitney cars from the corner of Dundas and Keele Sts., the West Toronto terminus of the Toronto Ry. cars, to Weston and Lambton, alongside the Toronto Suburban Ry. If successful, other lines in the West Toronto district will be developed.

Enquiry at the Toronto Police Department elicited the information that no official recognition is being made of the jitneys as such and that it is the intention to let them operate long enough to observe their characteristics before passing any regulating municipal bylaws. For the present, all jitney operation is considered as coming under the Cab and Livery Bylaws, nos. 69 and 70, which it is claimed have wide enough powers to cover the jitney situation for the present at least.

On April 20 the City Controllers authorized the City Solicitor to draft a bylaw to regulate jitney operation.

### St. John Railway Co's. Annual Report.

Following are extracts from the report for the calendar year, 1914, presented at the annual meeting at St. John, N.B., recently:—

The earnings, after providing for interest on the bonds and all other charges, were \$73,908.88, out of which there were paid four quarterly dividends of 1½% each, amounting to \$59,822.78, leaving a balance of \$14,086.10, which has been transferred to profit and loss account. The war has affected, to some extent, the company's business, and the railway earnings were materially reduced in consequence of the interruption to traffic during the summer months by the city repaving Main St. and Paradise Row.

The property has been maintained in a high state of efficiency, and considerable has been spent in upkeep of tracks, rolling

stock, power plant, gas works and buildings. The following works were carried out:—Extending the railway from Kane's Corner to Crouchville, and from the One Mile House past Rural Cemetery to Coldbrook and Glen Falls, in all 3¼ miles. No net return can be expected from the operation of these extensions for several years, but they were built in pursuance of the company's progressive policy to furnish the best service possible. A fireproof car barn, 58 x 213 ft., was built on Wentworth St. Twelve new semi convertible cars were bought.

A strike of street railway employees belonging to the union commenced on July 22 and ended July 24. Since the incorporation of the company (20 years ago), the relations with the employees have been most satisfactory. Questions arising have been amicably and quickly settled. In June last, the Manager, by order of the directors, dismissed a conductor named Ramsay, for cause. The board of conciliation was applied for by the union employees, and the Minister of Labor appointed R. T. Hayes, Judge Forbes, and J. L. Sugrue. After hearing the evidence submitted, the board reported:—"That the action taken by the directors in dismissing Ramsay was properly taken to support the authority of the Manager, and to preserve discipline, and for the best interest of the public, and with a due regard to public safety." The union, however, declared a strike, and in consequence of no police protection being afforded, a gang of rioters on the evenings of July 23 and 24 did serious damage to the plant, equipment, power house, street lights and cars. The amount of the direct damage was \$15,560. The consequential damages by reason of the tying up of the road and business was from \$10,000 to \$15,000. We put in a claim to the city to be reimbursed for the actual damages suffered, but the city refused to recognize any liability. In view of the fact that the police did not afford any protection in the running of our cars, or attempt to control or stop the rioters from damaging our property, your directors are of the opinion that the city should have reimbursed us for the loss the company has suffered. The police force has been reorganized and increased, and a new chief appointed, and we hope that full protection will in the future be given to the city and citizens, and property fully protected.

The directors expected to dispose of treasury bonds to meet payments on capital expenditure, but owing to war conditions and consequent financial depression only \$21,800.00 were sold.

The directors, who were re-elected, are:—H. H. McLean, K.C., M.P., President; F. R. Taylor, Vice President; R. B. Emerson, J. Manchester, Hon. W. H. Thorne and J. K. L. Ross. H. M. Hopper is General Manager and Secretary.

**Toronto Suburban Railway's City Extensions.**—The Ontario Railway and Municipal Board had the application of the City of Toronto to compel the Toronto Suburban Ry. to lay certain tracks in West Toronto, before it, Apr. 16. The application covers the laying of tracks on Pacific Ave., and Annette and Keele Sts., and on the order of the Board, the company was given until Apr. 30 to announce its policy. Counsel for the company stated that the proposed new lines would cost between \$65,000 and \$80,000, and owing to the state of the market at present, the company could not raise the money. It is suggested that if the company is opposed to building the lines mentioned, that it surrender its franchise so far as these streets are concerned, and leave the city open to lay tracks there.



# Marine Department

## Dominion Canal Statistics for 1914.

The following abstract has been prepared by J. L. Payne, Comptroller of Statistics, Railways and Canals Department:

The total volume of traffic through the canals of Canada for the calendar year 1914 was 37,023,237 tons, a decrease of 15,030,676 from 1913. The increases and decreases were distributed among the various canals as follows:

	Tons.	Tons. Increase	Tons. Decrease
Sault Ste. Marie . . . . .	27,549,184	.....	15,100,140
Welland . . . . .	3,869,969	290,255	.....
St. Lawrence . . . . .	4,391,493	89,066	.....
Chambly . . . . .	436,905	.....	118,697
St. Peters . . . . .	54,180	.....	17,334
Murray . . . . .	83,907	.....	96,669
Ottawa . . . . .	335,132	.....	30,306
Rideau . . . . .	151,739	.....	19,484
Trent . . . . .	67,715	11,915	.....
St. Andrews . . . . .	42,013	.....	39,282
Total . . . . .	37,023,237	391,236	15,421,912

Of the total decrease of 15,030,676 tons, 1,748,669 was in Canadian, and 13,282,007, in U. S. waterborne traffic. The falling off was almost wholly at Sault Ste. Marie, and applied chiefly to iron ore belonging to the U. S. As compared with 1913, Canadian traffic decreased by 15.7%, and U. S. traffic by 32.6%.

The movement of waterborne traffic in 1913 and 1914 was distributed, by months, as follows:

	1913, Tons	1914, Tons
January . . . . .	397	494
April . . . . .	875,226	554,111
May . . . . .	7,260,227	5,307,123
June . . . . .	7,647,189	6,136,657
July . . . . .	8,137,169	6,339,831
August . . . . .	7,625,782	6,261,380
September . . . . .	7,531,379	6,069,946
October . . . . .	7,350,914	4,660,448
November . . . . .	4,891,143	1,470,471
December . . . . .	734,487	222,740
Total . . . . .	52,063,913	37,023,237

By classes of commodities, the movement of freight in 1913 and 1914 was as follows:

	1913, Tons	1914, Tons
Products of agriculture . . . . .	8,552,327	7,963,868
Animal products . . . . .	19,301	18,681
Products of the forest . . . . .	1,678,925	1,621,967
Products of the mine . . . . .	39,951,661	26,204,196
Manufactures . . . . .	1,881,699	1,218,525
Total . . . . .	37,023,237	52,063,913

The tonnage of Canadian and U. S. traffic in 1913 and 1914 was:

	1913, Tons	1914, Tons
Canadian . . . . .	11,130,875	9,382,206
United States . . . . .	40,923,038	27,641,031

In 1913 U. S. traffic made up 78.7% of the whole, and in 1914 it was 74.7%. It should also be pointed out that 1,068,812 tons of Canadian traffic passed through the U. S. Canal at Sault Ste. Marie. Of the aggregate volume of traffic through all the canals of Canada, 74.4% passed through the canal at Sault Ste. Marie. Of the total traffic at that gateway 86.9% was United States. Joining the traffic which passed through both the Canadian and U. S. canals at Sault Ste. Marie in 1914, it was found that out of a total of 50,692,092 tons belonging to the U. S. 47.3% passed through the Canadian canal, while out of a total Canadian traffic of 4,678,559 tons only 22.8% sought the U. S. channel. Put in another way, while 86.9% of the total traffic through the Canadian canal was U. S., only 3.9% of the aggregate freight tonnage through the U. S. canal was Canadian.

At the Welland canal 47.6% of the total traffic was U. S., through the St. Lawrence canals it was 37.7%, and through the Chambly canal 29.5%.

Another fact of importance in relation to the traffic through the Canadian canal at Sault Ste. Marie in 1914 is that 86.2% of the

eastbound U. S. freight tonnage consisted of iron ore. When iron ore is eliminated, Canadian eastbound business at that point amounted to 2,785,114 tons, as against 919,725 tons of U. S. eastbound commerce.

**Wheat Traffic.**—The volume of Canadian wheat moved down from the west by water in 1914 amounted to 95,032,066 bush., against 141,726,899 in 1913. In the form of flour, 14,739,872 additional bush. of Canadian wheat were moved, bringing the total up to 109,771,938. The falling off in shipments of wheat including flour, totalled 42,867,059 bush. for the year. The distribution of Canadian wheat from the head of Lake Superior in 1913 and 1914 was as follows:

	1913 Bushels	%	1914 Bushels	%
From Port Arthur, Fort William and Duluth . . . . .	15,186,632	10.7	10,283,166	10.8
To Montreal . . . . .	26,054,001	18.4	24,864,466	26.2
To Georgian Bay ports . . . . .	28,973,333	20.5	34,350,700	36.2
To other Canadian ports . . . . .	71,522,933	50.4	25,533,734	26.8
To Buffalo . . . . .	141,726,899		95,032,066	

The diversion to Buffalo in 1914 was 26.8% of the whole, compared with 50.4% in 1913. The distribution by months showed marked changes for the autumn period, due, no doubt, in large measure to the influences of a short harvest and the war.

The freight rates on practically all cargoes of wheat shipped from Port Arthur and Fort William were ascertained, and when worked out they yielded the following averages for the seasons of navigation 1913 and 1914:

	1913	1914
To Montreal . . . . .	Per ton per mile . . . . . 1.142 cent	1.124 cent
Per bushel . . . . .	5.35 cent	4.58 cent
Per ton . . . . .	\$1.78	\$1.52
To Georgian Bay ports: . . . . .		
Per ton per mile . . . . .	.148 cent	.095 cent
Per bushel . . . . .	2.28 cent	1.46 cent
Per ton . . . . .	76.00 cent	48.61 cent
To other Canadian ports: . . . . .		
Per ton per mile . . . . .	.104 cent	.065 cent
Per bushel . . . . .	2.44 cent	1.48 cent
Per ton . . . . .	81.21 cent	49.29 cent
To Buffalo: . . . . .		
Per ton per mile . . . . .	.103 cent	.061 cent
Per bushel . . . . .	2.43 cent	1.63 cent
Per ton . . . . .	81.00 cent	53.72 cent
To Kingston: . . . . .		
Per ton per mile . . . . .	.096 cent	
Per bushel . . . . .	3.08 cent	
Per ton . . . . .	\$1.00	

The freight rates were also tabulated by months to fit the foregoing routes of distribution: but they would take up too much space in an abstract of this nature. Charges paid by vessel owners out of freight rates ranged from 0.38c. per bush. to 0.59c., according to the destination of the cargo.

The volume of Canadian oats shipped down from the west by water in 1914 was 26,240,701 bush., compared with 43,423,367 in 1913.

At Port Colborne, 35,760,979 bush. of grain, chiefly wheat, were passed through the Government elevator during the year.

The capital cost of the canals of Canada up to Mar. 31, 1914, was \$107,486,316, and the cost of maintenance for the year was \$1,753,898.

The Montreal and St. Lambert Terminal Development Co., a Quebec corporation, has reduced its capital from 3,500 shares of \$100 each, to \$315,000 by returning to the stock holders \$10 a share, and declaring the shares to be of the value of \$90 each.

## Toronto Harbor Improvements.

During this year the Toronto Harbor Commission will expend about \$2,000,000 on the extension of the harbor scheme developed by it about two years ago. Half the amount will be supplied by the Commission and the other half by the Dominion Government. No changes will be made in the previously accepted plans.

On the western water front, from the Humber River easterly, about 3,900 ft. of crib substructure for the sea wall has been completed, and this year the concrete topping will be placed and that section of the sea wall completed. In addition, there will be added to the east about 5,000 ft. of crib substructure, which will also be filled ready for the concrete topping next spring.

On the ship channel at the east end of the improvement work, about 7,500 ft. of substructure has been completed, and a portion will be topped with concrete this year. Some 9,900 ft. of substructure will be placed this year, and a portion of it topped with concrete. This section includes the turning basin at the east end of the ship channel. The central 2,800 ft. of the north slip, which extends from the Don river to the harbor, was completed last year, and the balance will be completed this year. The bulkhead pier at the contemplated docks on the east side of the harbor has been completed. Across the east slip, a 120 ft. span, 86 ft. wide bascule bridge is being built at a cost of \$105,000, which is apart from the \$2,000,000 appropriation for this year.

It is the intention to pump about 3,500,000 cu. yds. of sand from the lake into the Ashbridge's Bay industrial area. There will also be some sand pumped behind the western sea wall, and on certain low sections at the island. We are indebted to A. C. Lewis, Secretary of the Commission, for the foregoing information.

## Great Lakes Vessels Insurance.

A dispatch from Cleveland, Ohio, states that the underwriters in hulls have reached an agreement regarding rates of insurance and forms of policy for this season. Some changes are announced, all of which are in favor of vessel owners. The dispatch says that all steel boats will get the preferred rate, which will be a little lower than in 1914, and in addition the season has been extended. The regular season will be from midnight Apr. 15 to midnight Nov. 30, but owners will be permitted to make sailings up to midnight Dec. 12. The extra charge for extensions in insurance will be 1/2% up to Dec. 5, 3/4% up to Dec. 8, and 1% up to Dec. 12. In 1914 the preferred rate for the sailing season was 3 3/8%. Under the new policy the same rate will be charged for the year, which insurance agents figure is a reduction of 1/4%. The new arrangement for extension gives owners of insured vessels a chance to operate late in case profitable rates are paid, and they can line up business ahead, which could not be done under the old plan. Most of the big lines have been placed, and considerable business was lined up last January at 3 3/8%, with the understanding that if a lower rate was made the boats would get the benefit of the cut. Including the 25% that will be carried by the Great Lakes Protective Association, the bulk of the business will be placed with U. S. companies, but the London underwriters will get some of lake business.



## Coast, Lake and River Officers for 1915.

The following appointments, made by navigation companies, engaged in Canadian navigation, for their various steam vessels and tugs, for this year, have been reported to CANADIAN RAILWAY AND MARINE WORLD by the managements since those published in the April issue. The first column shows the names of the vessels, the second those of the captains, and the third those of the chief engineers.

BASSETT STEAMSHIP CO. LTD., TORONTO.	Mariska	G. H. Playter	F. Lugin
BOWRING BROS. LTD., ST. JOHN'S, Nfld.	Flaciel	I. Bishop	A. McKinlay
	Florizel	W. J. Martin	J. V. Reader
	Hawk		J. Fitzgerald
	Portia	J. W. Kean	A. Smith
	Prospero	A. Kean	J. McKinlay
	Ranger		F. Maher
	Stephano	C. Smith	J. M. Fernandez
	Terra Nova	W. J. Bartlett	A. G. Osmond
	Viking	W. J. Bartlett, Jr.	C. N. Lewis
	Zelda (tug)	W. White	W. Squires
CANADA STEAMSHIP LINES, LTD., MONTREAL.	Altha	J. Crawford	J. S. Thurston
	Alexandria	W. Bloomfield	G. Boyd
	America	C. J. Hinckley	Jas. Gillie
	Bellevue	Jos. Rinfret	Jno. Kennedy
	Boucherville	A. Laviolette	C. Hamel
	Cascapedia	Jno. Hearn	Jno. Van Koenig
	Caspian	J. J. Jarrell	C. McWilliams
	Louis Philippe	H. Mandeville	H. Noel
	Murray	F. X. LaFrance	N. Beaudoin
	Murray Bay		A. Charbonneau
	New Island Wanderer	W. C. Hudson	R. A. Bergen
	Quebec	L. R. Demers	J. Matte
	Ramona	E. M. Charlebois	S. M. Pelow
	Rapids Prince	G. Batten	G. M. Harlett
	Rapids Queen	J. P. Stephenson	J. E. Kane
	Saguenay	Jos. Simard	A. Godin
	St. Irene	W. Gagne	G. Gagnon
	St. Lawrence	Jno. Bertrand	B. F. Farrell
	Tadoussac	Jos. Dugal	M. Latulippe
	Thousand Islander	C. H. Kendall	W. M. Willix
	Three Rivers	A. Mondor	C. Gendron
THE CANADIAN FISHING CO., VANCOUVER, B.C.	Celestial Empire	D. Barry	P. Vint
	Emma H.	H. Whitman	V. H. Woodbury
	Flamingo	A. Freeman	A. Morrow
	Pescawha	W. H. Gillen	R. Duke
CANADIAN TOWING & WRECKING CO., PORT ARTHUR, ONT.	Home Rule	W. Nuttall	W. Faloona
	James Whalen	A. Morrison	H. Cross
	Minnie W.	R. Nuttall	J. Currie
	Orcadia	G. Buel	
	Roi Tan	W. Garrick	C. Kennedy
	Salvor	E. J. Cadotte	A. Vigers
	Sarnia	G. Stitt	J. Farquharson
	Superior	A. Fader	L. Williams
	Viper	A. McDonald	M. Cosgrave
CENTRAL CANADA COAL CO., BROCKVILLE, ONT.	Samuel Marshall	W. A. Tulloch	J. R. Ferguson
DETROIT, WINDSOR & BELLE ISLE FERRY CO., DETROIT, MICH.	Britannia	D. Jaugins	W. Nolan
	Clare	R. Ferguson	H. Furby
	Columbia	J. Denstead	H. McAlpin
	Excelsior	H. Hugson	S. Merrill
	Pleasure	A. Bains	D. Reid
	Promis	J. Clentworth	W. Linter
	Sappho	G. Chareite	W. Wilkes
	Victoria	P. Williams	E. Seamour
GREAT LAKES & ST. LAWRENCE TRANSPORTATION CO., CHICAGO, ILL.	A. D. Davidson	C. Baah	B. Hammond
	A. M. Marshall	T. B. Greenway	O. T. Biddle
	Geo. C. Howe	F. P. Russell	J. R. Jones
	H. G. Dalton	F. C. Hector	C. E. Crampton
	J. S. Keefe	D. Barry	G. Squier
	John Cerar	C. Bennett	W. Vollmer
	John Lambert	E. Quackenbush	J. A. Gallarno
	S. N. Parent	F. H. Johnson	R. S. Mott
	Robt. Wallace	J. A. Connelly	O. F. Larson
HALIFAX & INVERNESS STEAMSHIP CO., HALIFAX, N.S.	Strathlone	W. Dickson	J. Conrad
GEO. HALL COAL CO., OGDENSBURG, N.Y.	A. D. McTier	S. V. Anderson	J. W. Estes
	Adrian Iselin	S. Hourigan	E. A. Barker
	F. P. Jones	H. M. Russell	W. C. Thompson
	Fred. Mercur	S. LeBraun	B. J. Mainwaring
	Harry B. Hall	D. A. Kiah	J. W. Aline
	John Rugee	J. J. Powers	K. G. Jardin
	Lucius W. Robinson	W. A. Russell	W. J. Brown
	Phoenix	H. Russell	J. A. Riga
HOME STEAMSHIP CO., SYDNEY, N.S.	Eskasoni	J. L. Newman	Jas. Macrae
HUDSONS BAY CO., WINNIPEG.	Athabasca River	E. B. Haight	Jno. Sutherland
	Fort Murray	J. W. Mills	W. Johnson
	McKenzie River	G. Patton	G. King
	Port Simpson	C. A. Gardner	W. L. Alexander
IMPERIAL OIL CO., SARNIA, ONT.	Imperial	H. C. Mims	A. Davidson
	Imperoyal	N. Scott	S. Brown
	Iocoma	G. T. Cross	J. Smith
INSULAR STEAMSHIP CO. LTD., WESTPORT, N.S.	Westport III	E. Lewis	Jas. Strickland
LAKE COMMERCE LTD., TORONTO.	Arabian	W. Beatty	J. M. Morris
	Valcartier	G. Mackey	O. Flumerfelt

MAGDALEN ISLAND STEAMSHIP CO., PICTOU, N.S.	Lady Sybil	F. Ferguson	C. B. McArthur
MAJESTIC STEAMSHIP CO. LTD., ST. JOHN, N.B.	Champlain	C. J. Wasson	B. Estabrooks
MERCHANTS TRANSPORTATION CO., SYDNEY, N.S.	Weymouth	W. E. LeBlanc	Jos. McDonald
MIDLAND TRANSPORTATION CO. LTD., MIDLAND, ONT.	C. W. Chamberlain	B. W. Morgan	H. Smith
NORTH SHORE STEAMSHIP CO., SYDNEY, N.S.	Aspy	D. McDonald	Jno. Jackson
OTTAWA RIVER NAVIGATION CO., MONTREAL	Duchess of York	A. Blondin	F. Piche
Empress			A. L. de Martigny
OTTAWA TRANSPORTATION CO. LTD., OTTAWA, ONT.	Dolphin	Z. Lavigne	D. Moranville
	Florence	E. Lefebvre	A. Madore
	Hall	J. Barclay	W. Drury
	Ottawan	R. Malette	C. Lilburn
	Scotsman	E. Francoeur	N. Lavigne
	Sir Hector	W. Mainville	Z. Belanger
PEACE RIVER NAVIGATION CO., EDMONTON, ALTA.	Northland Call	G. Magar	A. Grant
PROGRESSIVE STEAMBOAT CO., VANCOUVER, B.C.	Harry S.	H. Grouer	Jno. Inches
	Progressive	L. Hagen	G. Dixon
	Pronative	Jno. Walters	O. Mathewson
QUEBEC & LEVIS FERRY CO. LTD., QUEBEC, QUE.	Charles H. Shaw	P. Levesque	J. Michaud
	John S. Thom	A. Lessard	A. Dion
	North	A. Labadie	E. Boivin
	Pilot	P. Levesque	W. McMillan
	Polaris	A. Lessard	N. Lamontagne
	Queen	A. Labadie	P. Ouellet
	South	G. Fortin	A. Barron
REID NEWFOUNDLAND CO., ST. JOHN'S, Nfld.	Argyle	G. O'Reilly	T. Moyst
	Bruce	G. Spracellin	F. C. Barnes
	Clyde	J. Kne	J. Pollock
	Dundee	D. Blandford	H. Crawford
	Ethie	J. Day	P. Burton
	Glencoe	A. Blandford	E. J. Birch
	Home	S. Harbin	J. Cunningham
	Kyle	B. Taverner	Jas. McFarlane
	Meigle	J. Goobie	Jno. McFarlane
	Sagona	N. Kennedy	J. Roberts
RICHMOND STEAMSHIP CO., SYDNEY, N.S.	Richmond	W. H. Micheau	R. C. Morrison
SEVERN RIVER & LAKE COUCHICHING NAVIGATION CO., LTD., ORILLIA, ONT.	Champion	T. Marshall	T. W. Wood
	Sonicie	T. W. Wood	H. A. Wood
SHEPODY NAVIGATION CO., LTD., MONCTON, N.B.	Wilfrid C.	C. W. Edgett	J. B. Blessdale
WESTERIAN TRANSPORTATION CO., LTD., OTTAWA, ONT.	Westerian	A. Lefebvre	O. Lamoureux

## Marine Votes for 1915-16.

Amounts voted by the Dominion Parliament for the fiscal year ending Mar. 31, 1916, include the following items:

## TO BE CHARGED TO CAPITAL ACCOUNT.

		Revotes
Welland Ship Canal	\$5,500,000	\$500,000
Canals—		
Lachine	\$ 181,000	
Rideau	40,000	\$40,000
Soulanges	34,500	20,000
Trent	1,516,000	
Welland	50,000	50,000
	\$1,821,500	\$110,000
Harbors and rivers—		
Esquimalt dry dock	\$ 250,000	\$250,000
French River waterway	450,000	450,000
Halifax dry dock	250,000	250,000
Port Arthur and Fort William	1,200,000	
Quebec Harbor		
Launon dry dock	700,000	700,000
Levis wharf	34,200	34,200
Improvements	500,000	500,000
St. Charles River	500,000	500,000
St. John harbor	1,500,000	
Toronto harbor	1,000,000	
Vancouver harbor	1,000,000	
Victoria harbor	1,400,000	
	\$8,784,200	\$2,684,200

## TO BE CHARGED TO INCOME ACCOUNT.

		Revotes
Canals—		
Chamby	\$ 13,500	\$ 6,500
Cornwall	19,500	7,500
Quebec	41,000	26,000
Rideau	45,000	12,000
St. Peters	299,000	23,000
Soulanges	11,200	10,000
Trent	40,000	
Welland	36,000	5,000
	\$505,200	\$90,000
Harbors and rivers—		
Nova Scotia	\$ 691,950	\$573,050
Prince Edward Island	158,100	112,000
New Brunswick	546,900	295,600
Quebec	819,650	483,900
Ontario	1,413,580	712,600
Manitoba	167,900	112,000
Saskatchewan and Alberta	91,000	59,000

British Columbia	484,900	291,100
Yukon	5,000	
General	40,000	
	\$4,418,980	\$2,639,250
Dredging, general	\$2,307,000	\$679,000
Mail subsidies—Atlantic Ocean		\$1,844,167
“ “ Pacific Ocean		487,142
“ “ Local		310,125
		\$2,641,234
Naval service		2,355,400
Ocean and river service		1,256,900
Marine Department, capital account		2,458,000
Lighthouse and coast service		2,429,540
Hospitals and distressed seamen		78,000
Steamboat inspection		83,265

Included in the foregoing are appropriations for the provision of a number of steamships for service at various points. A revote of \$500,000 was made for an ice-breaker for use in the St. Lawrence River. This vessel was ordered from Canadian Vickers, Ltd., Montreal, last year, and but for the war, would have been delivered early this year. The new vessel will be an icebreaker alone, and will be of much greater power than any other of the Government vessels.

A steamship for testing and sweeping the St. Lawrence Ship Channel is approaching completion at the Government shipyard at Sorel, Que., and it is expected that she will be launched during May. A lighthouse and buoy steamer, named Grenville, has been built at Polson Iron Works, Toronto, it was expected that she would be put through her trials at the end of April. This vessel is to replace the Scout in the lighthouse buoy service. The vessel to replace the s.s. Maisonneuve, will be built at the Government shipyard at Sorel, Que.

In addition to the amounts voted as mentioned above, \$354,000 was re-voted for the provision of an additional car ferry steamboat for the Intercolonial Ry. service on the Strait of Canso, and for a dock for same at Mulgrave, N.S. This vessel was launched recently at Newcastle, Eng., as mentioned elsewhere in this issue. For a fisheries patrol steamboat for Lake Winnipeg, a further \$100,000 was voted for the current year, and for which, \$184,400 was voted last year. A description of this vessel was given in Canadian Railway and Marine World for July, 1913, and she is now nearing completion at Selkirk, Man. It is expected that she will be placed in service during June.

The Dominion Coal Co. announces the discontinuance of the passenger and general cargo service, which it has, for many years, operated in connection with the Black Diamond Line between Montreal, Prince Edward Island, Sydney and St. John's, Nfld. The service has become unprofitable during the last few years and the company has lost while engaged in this service, the steamships Cacouna and City of Sydney, the latter having been specially purchased for this service. The present market rates make it impossible to build or purchase suitable steamers to replace these lost and the company has, therefore, decided to discontinue the freight and passenger service at least until conditions justify its resumption.

Drawback on Vessel Construction Materials.—An order in council has been passed providing that in the payment of drawback on materials used in the construction of vessels built and registered in Canada, or built and exported under Governor's pass, for sale and registry in any other country, the certificates of Lloyd's Register, British Corporation, Bureau Veritas and Norwegian Veritas may be accepted in determining the class of vessel. The certificate of a Dominion hull inspector may also be accepted, when setting forth that the vessel has been so built as to fill the requirements of any one of the foregoing societies.



## Another Car Ferry for the Ontario Car Ferry Company.

An all steel car ferry, Ontario No. 2, a sister ship to Ontario No. 1, which is being operated between Cobourg, Ont., and Charlotte, N.Y., by the Ontario Car Ferry Co., was launched by the Polson Iron Works, Toronto, Apr. 3, the christening ceremony being performed by Mrs. Hugh Calderwood, Barrie, Ont., wife of the designer. The Ontario Car Ferry Co. is a combination of the G.T.R. and Buffalo, Rochester and Pittsburgh Ry. interests, formed some years ago to handle the coal traffic originating on the latter company's lines, destined to points in Eastern Ontario on G.T.R. lines, the object being to eliminate the long haul around the west end of Lake Ontario. The business handled by the company has increased to such a degree that the addition of another vessel became necessary. The new one is almost identical with the one at present in service, which was described in Canadian Railway and Marine World, May, 1907. Descriptions of the new ferry appeared in Canadian Railway and Marine World, Apr. 1914, and Jan. 1915, with plans, etc.

It is of the shelter deck type, with four tracks for cars on the main deck, and will be propelled by twin screws. The main deck is of steel throughout, without wood covering; the shelter deck is of steel laid flush, with a deck house running through-

working speed of 13 miles an hour, with reserve power to make 15 miles an hour under emergency conditions. Following are the principal general dimensions:

Length overall .....	318 ft.
Length between perpendiculars.....	307½ ft.
Beam moulded .....	54 ft.
Beam on main deck .....	56 ft.
Depth at centre, main deck to promenade deck .....	17 ft.
Depth at side, main deck to promenade deck .....	17 ft.
Draught of water full loaded .....	16¼ ft.
Camber of main and promenade decks.....	9 ins.
Depth to promenade deck .....	20½ ft.
Rise of floor .....	2 ft.

The vessel is built on the transfer system, with solid plate floors and bulb angle frames, with the steel plate extra heavy for working in ice, and not reduced forward. It is built to pass the inspection of the Great Lakes Register, and to receive its highest rating.

The propelling machinery consists of two triple expansion, 20½ x 33 x 54 x 36 in. jet condensing engines, operating normally at about 110 r.p.m., both engines turning outwards. The boilers will be fitted with forced draught, and will operate at 180 lbs. pressure.

Among those witnessing the launching were the following: H. G. Kelley, President, Ontario Car Ferry Co. and Vice President,



Car Ferry Ontario No. 2, on the Ways before Launching.

out its greatest length, and containing accommodation for passengers, officers and crew. It has a wooden pilot house and bridge on top of the deck house forward, and a pilot house at the rear end of the deck house. It is divided into six transverse watertight bulkheads, extending from the keel to the main deck, with a longitudinal bulkhead along the centre line in three watertight ballast tanks 13 ft. deep. Two of these ballast tanks are immediately forward of the boiler room, and the third immediately aft of the engine room. The steel lower deck, laid throughout the forward and aft holds and both peaks, forms the top of the deep water ballast tanks. There are two shaft alleys, leading back from the engine room, one on each side, extending into the stuffing box bulkhead. The boiler room contains four single ended Scotch marine boilers placed amidships, with one firehold athwartships and one wing coal bunker on each side of the boiler room. The hull is bossed out on each side to enclose the propeller shafts. There are two steel pole spars without masts or sails.

The vessel has a capacity for 30 standard coal cars of 70 tons gross weight each, and 200 tons of coal in the bunkers. There will also be accommodation for 800 first class, and 200 second class passengers. Her tonnage is 5,430 gross, and her launching tonnage was 2,400 deadweight. The draught will be about 16¼ ft. when fully loaded, and the vessel will have a normal

G.T.R.; W. H. Smith, Manager, Ontario Car Ferry Co.; G. A. Bowman, Asst. Gen. Freight Agent, Buffalo, Rochester and Pittsburgh Ry.; W. D. Robb, Superintendent of Motive Power, G.T.R.; J. B. Miller, Pres. and Gen. Man., A. H. Jeffry, Secretary and Manager, H. H. Miller, Vice President, and W. H. Newman, Works Manager, Polson Iron Works; T. B. F. Benson, representing Lloyds; Capt. Foote, representing the underwriters; Capt. Forrest and A. Nichol, captain and chief engineer of Ontario No. 1, who will hold similar positions on Ontario No. 2.

## Canadian Pacific Ocean Services, Limited.

Canadian Pacific Ocean Services, Ltd., has been registered in London, Eng., with a capital of £2,000,000 in shares of £10 each, to design, lay out, build, purchase, charter, sub-charter, lease, hire, take in exchange or otherwise acquire, hold, own, improve, maintain, operate, let out on hire by charter or otherwise, sell or dispose of ships, tugs, barges, scows, vessels, tenders, lighters and craft of every description, whether propelled by sail or by steam or other power; to employ the company's vessels in the conveyance of passengers, mails, troops, munitions of war, freight, live and dead stock, coal, minerals, treasure, produce, and goods and merchandise of every kind; to acquire any postal or other subsidies; to enter into mail and

other contracts; to carry on the business of ship and loading brokers, managers of shipping property, ship chandlers, tourist, forwarding and general agents, etc.

The signatories to the articles of association are,—H. Maitland Kersey, Manager in Chief of Ocean Services, C.P.R.; G. McL. Brown, European Manager, C.P.R.; G. A. Crawley; A. J. Campbell; W. W. Paine; Sir Thomas Skinner, Director, C.P.R., and T. H. Skinner, all of London, Eng. The first directors are: I. G. Ogden, Vice President, C.P.R.; G. M. Bosworth, Vice President, C.P.R.; E. W. Beatty, Vice President and General Counsel, C.P.R.; D. McNicoll, Director, C.P.R., and F. E. Meredith, K.C., all of Montreal, and H. Maitland Kersey and Sir Thomas Skinner, London, Eng. The directors' qualification is 100 shares, and any remuneration will be fixed by the company.

## Lake Vessels Chartered for Gulf and Ocean Service.

Canadian Railway and Marine World for April contained considerable information as to a number of lake vessels chartered for service in the St. Lawrence River and Gulf, and for coasting and ocean service as far as the West Indies. Among the vessels mentioned, we have been advised that the Turret Cape, Turret Crown, Canadian, Acadian and D. A. Gordon, have been chartered by the Nova Scotia Steel and Coal Co., New Glasgow, N.S., and that they will be used in the coal trade between North Sydney and St. Lawrence points. We have also since been advised that the Dominion Iron and Steel Co., Sydney, N.S., has chartered the Canadian Lake and Ocean Navigation Co.'s s.s. Scottish Hero, for three years. She was ordered recently to proceed from Goderich to Ashtabula, Ohio, where she is being cut in two, to enable her to pass through the Welland Canal locks. She is the largest of the turret type of vessels which have been operating in the upper lake service, and was built at Sunderland, Eng., in 1895, her dimensions being, length 297 ft., breadth 40 ft., depth 24.1 ft.; tonnage, 2,201 gross, 1,386 register. She is equipped with quadruple expansion engines with cylinders 19½, 27½, 39 and 54 by 42 ins. supplied with steam by three Scotch boilers, each 11 by 10½ ft., at 110 lbs. pressure.

Reference was made in our April issue to the statement in the press that certain vessels owned by Canada Steamship Lines, Ltd., had been operating in the ocean service during the winter, implying that these were lake vessels, and it was then stated that none of that company's vessels had been operated in ocean service during the winter, except the regular ocean vessels which had been running full. These vessels are Parima, Korona and Guiana, running between New York, Windward Islands and Demerara, the Bermudian, running between New York and Bermuda, and the Trinidad, running between New York and European ports.

A press dispatch from Ottawa, Apr. 19, stated that to increase ocean tonnage, arrangements are being made which will bring a considerable number of larger lake vessels into trans-Atlantic service until the end of the war. Canadian steamship lines doing business on the Great Lakes will supply 15 vessels, while other vessels will be secured. Officers of these vessels are being examined for new certificates which will be required to enable them to sail on the Atlantic. Several additional vessels will also be assigned to the Canadian trade. These will include a large new vessel which has just been completed.



## Canada Steamship Lines Annual Report and Meeting.

Following are extracts from the report presented at the first annual meeting in Montreal, Mar. 25, for the period from Dec. 15, 1913, to Dec. 31, 1914:

The year 1914, which began with reasonable prospects, will long be remembered as having witnessed the greatest political, commercial and financial upheaval in the world's history. That Canadian undertakings have had to bear an unprecedented strain is well known; but so far, Canada is passing through the crisis in a way that is commendable. That the worst is over seems manifest, and the country is working out a readjustment of conditions which are daily becoming more normal. Your company was, perhaps, to a greater degree than most others, affected by the war, a large part of its great fleet being tied up for over a month in the heart of the season owing to the practical suspension of ocean traffic at the commencement of the war. The partial failure of the northwest crops and the consequent very low freight rates obtained in the fall made a further serious impression on your company's earnings. The shortage in the wheat and oat crops alone was over 100,000,000 bush. The outbreak of war practically suspended passenger travel, and although a more normal condition in this respect soon became apparent it was too late to benefit the year 1914. The business done by your company preceding the war was fully up to expectations, and consequently your directors declared and paid quarterly dividends on the preference shares on March 1 and June 1. The balance of the 7% dividend on these shares (which is cumulative), was, however, owing to the effects of the war, deferred. In this connection your directors have decided that dividends in the future should only be paid after the year's business has been closed and accounts audited.

The fixed assets have been increased by over \$1,000,000, representing new vessels; and depreciation to the extent of nearly \$500,000 has been written off. The fleet now consists of 103 vessels.

During the year the company suffered a severe loss in the death of its senior Vice President, the late Wm. Wainwright, who for nearly 30 years had been Vice President of the Richelieu & Ontario Navigation Co., and whose long experience and world-wide connection with transportation as Vice-President of the G.T.R. was of great value and assistance in building up Canada's mercantile marine. On June 11, 1914, J. E. Dalrymple and Geo. H. Smithers were elected directors to fill vacancies on the board.

### OPERATING ACCOUNT FOR YEAR ENDED DEC. 31, 1914.

Operating Revenue	
Vessels .....	\$ 6,272,232.86
Docks and wharves .....	193,388.62
Miscellaneous .....	78,929.21
	<hr/>
	6,544,550.69
Other revenue .....	41,259.84
Total revenue .....	\$ 6,585,810.53
Expenses .....	5,657,773.63
	<hr/>
Net earnings .....	\$ 928,036.90
Interest on mortgage bonds .....	\$166,230.47
Interest on debenture stock at 5% .....	285,234.42
Funded debt expense.....	5,622.23
Other interest .....	10,252.36
Reserve for depreciation under trust deed.....	455,630.18
Reserved for doubtful debts, claims, etc.....	50,000.00
Directors' fees .....	15,000.00
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	987,969.66
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Net loss for year .....	\$ 59,932.76

### PROFIT AND LOSS ACCOUNT.

Loss Dec. 15 to 31, 1913.....	\$ 18,299.50
Loss for year 1914 .....	59,932.76
	<hr/>
	\$ 78,232.26
Loss on sales, etc. of fixed assets .....	\$ 30,826.11
Proportion of following charged off:	
Organization expenses.....	59,304.25
Discount on Debenture stock .....	1,028.34
	<hr/>
	\$ 60,332.59
Dividends to May 31, 1914, paid on cumulative preferred stock....	401,041.63
	<hr/>
	492,200.33
Debit balance at Dec. 31, 1914....	\$ 570,432.59
	<hr/>
ASSETS.	
Vessels .....	\$ 18,200,493.02
Real estate, buildings, docks and wharves .....	5,229,136.80
Other Fixed assets .....	568,486.32
	<hr/>
	\$ 23,998,116.14
Less depreciation reserve .....	455,630.18
	<hr/>
	\$ 23,542,485.96
Cash in banks and on hand .....	\$131,566.05
Accounts receivable, less reserve for doubtful accounts .....	720,661.30
Insurance and other claims — estimated amount recoverable....	293,096.72
Interest receivable accrued .....	13,007.72
Inventories of stores and supplies .....	255,882.82
	<hr/>
	1,414,214.61
Insurance unexpired .....	\$208,272.14
Repairs, etc., applicable to 1915 season.....	52,118.93
	<hr/>
	260,391.07
Investments (at cost) .....	189,483.37
Funds deposited with trustees for mortgage bonds and debenture stock .....	801,340.08
Organization expenses, less proportion written off .....	237,217.01
Discount on debenture stock, less proportion written off .....	29,821.87
	<hr/>
	\$ 26,474,953.97
Leases, contracts and goodwill....	8,589,646.79
Balance at debit of profit and loss account .....	570,432.59
	<hr/>
	\$ 35,635,033.35

### LIABILITIES.

125,000 shares 7% cumulative preferred stock .....	\$12,500,000.00
120,000 shares common stock .....	12,000,000.00
	<hr/>
	\$24,500,000.00
First mortgage bonds.....	\$2,664,462.20
5% debenture stock ....	6,351,666.66
Loan to be secured by issue of debenture stock and vessel mortgages .....	851,666.66
First mortgage bonds—Northern Navigation Co., deposited as collateral security for bank loans ..	\$200,000.00
	<hr/>
	9,867,795.52
Bank loans .....	\$ 166,783.12
Notes payable .....	45,652.13
Accounts payable .....	839,148.76
Bond and other interest accrued .....	150,409.46
	<hr/>
	1,201,993.47
Reserves:	
For freight and other claims .....	30,179.63
For premium on redemption of Richelieu & Ontario Navigation Co. bonds .....	35,064.73
	<hr/>
	65,244.36
	<hr/>
	\$35,635,033.35

The directors were all re-elected and at a subsequent meeting of directors J. W. Norcross, formerly Managing Director, was elected Vice President and Managing Direct-

or, and the two vice presidencies held previously by M. J. Haney and J. P. Steedman, were abolished. The Board for the current year is: Sir Trevor Dawson, Honorary President; Jas. Carruthers, President; J. W. Norcross, Vice President and Managing Director; Sir H. Montagu Allan, M. J. Haney, J. P. Steedman, C. A. Barnard, H. B. Smith, Hon. J. P. B. Casgrain, J. R. Binning, D. B. Hanna, Edmund Bristol, J. E. Dalrymple, J. C. Newman, Aemilius Jarvis, G. H. Smithers.

### Car Ferry Scotia No. 2, for Intercolonial Railway Strait of Canso Service.

The car ferry Scotia No. 2 was launched at Newcastle-upon-Tyne, England, Apr. 15, the christening being performed by Lady Drummond, of Montreal. About the time of the launching the neighborhood of the yards where the vessel was built was visited by German aircraft, and a few bombs were dropped without, however, doing any material damage.

The Scotia No. 2, is similar to the Scotia, now employed in the I. R. C. service between the main land of Nova Scotia and Cape Breton Island, across the Strait of Canso, except that she is of somewhat larger dimensions. Her principal dimensions are, length overall 300 ft., length between perpendiculars 276 ft., breadth over fenders 48 ft., breadth moulded to deck 46 ft., breadth at load water line 43½ ft., depth moulded 19 ft., draught when laden with 1,400 tons of car load and 150 tons of coal, water and stores 14 ft., and she is equipped with engines of 3,000 i.h.p. The engines are of the triple expansion, inverted, direct acting, surface condensing type, working on three cranks, each set being a duplicate of the other, and they are so arranged that one engine can be made to work both propellers. There is a complete electrical installation, with a searchlight of the 15,000 c.p. pilot house type. Accommodation is provided for the officers and engineers in four rooms, with mess room, pantry and provision room. The crew will be placed in an open compartment below the main deck, and the whole accommodation is steam heated. A complete description of the vessel was given in Canadian Railway and Marine World for Nov. 1913, pg. 546.

### Atlantic and Pacific Ocean Marine.

It was stated in the House of Commons, Apr. 4, that French financial interests will organize a company shortly to establish a steamship service between the Canadian Pacific coast and Vladivostock, Russia.

The C.P.R. s.s. Metagama sailed from Liverpool, Eng., Mar. 27, on her maiden voyage to Canada, arriving at St. John, N.B., Apr. 5. She is of the single class cabin type, with accommodation for 500 cabin passengers and 1,200 third class.

The British s.s. Delmira, which was reported to have been sunk by a German submarine, in the English Channel, towards the end of March, was bound from Havre, France, for St. John, N.B. She was on her third trip to Canada for war supplies.

The Great Northern Steamship Co.'s s. s. Minnesota was wrecked near Iwajima, Japan, Apr. 11. She sailed from Nagasaki on the morning of that day for Kobe, Yokohama and Seattle. It is stated that a hole 120 ft. long was cut in the fore part, by striking a rock. All the passengers and crew were saved.

The s.s. Epsom, which was stranded at Carrera Point in the Magellan Straits, Aug.



9, 1914, and afterwards refloated and repaired at Punta Arenas, while en route from Nova Scotia to Port Mann, B.C., with rails for the Canadian Northern Ry., was drydocked at Esquimalt during April for a general overhaul. She was expected to go to Portland later to load grain for Europe.

The Neptune Association of Masters and Mates has submitted a request to steamship companies operating out of New York, that consideration be given to increases of pay for officers, and suggesting that masters receive \$200 a month, chief officers \$125, second officers \$100, third officers and all other deck officers \$90, representing increases of approximately \$70, \$35, \$30 and \$30 respectively.

Furness Withy and Co. have announced that their weekly sailings between Montreal and Manchester, Eng., by way of the Manchester Ship Canal, will be continued this season as heretofore, the first vessel sailing from Montreal about May 6. In addition to this service there will be a fortnightly one to Hull, Eng., the first vessel sailing from Montreal early in May. These are in addition to a number of tramp vessels.

The Australian Government is making use of a number of the German merchant vessels, which it has captured since the outbreak of war, by chartering them to local shipping firms for use in trade with Great Britain. They are chiefly engaged in carrying wool and general supplies to London. The German names of the vessels have been obliterated and numerals are used in their place, all preceded by the letter C.

A marine insurance company at Liverpool, Eng., has recovered £289 11s. 7d., from the British and Chilian Steamship Co., representing the amount paid in excess against claim for the loss of the s.s. Helvetia, which collided with the C.P.R. s.s. Empress of Britain in 1912. In the enquiry into the causes of the disaster, it was held that the Helvetia was seven-twelfths, and the Empress of Britain five-twelfths to blame.

The Canadian Salvage Co., which had in hand the salvage work on the C.P.R. s.s. Empress of Ireland, has obtained judgment from several insurance companies for \$22,685 for salving a quantity of silver from the wreck. It was on board when the vessel sank, and for this, the companies paid claims, and eventually engaged the services of the salvage company, for which \$36,172 was paid as expenses, but nothing for the silver brought up. Other amounts received by the salvage company for work in connection with the wreck were \$10,000 for the mails, and \$35,000 from the C.P.R. for the purser's strong box.

The Minister of Trade and Commerce, in dealing with ocean services in the House of Commons, recently, stated that owing to Admiralty requirements, the C.P.R. fleet had been reduced to three cargo and one passenger vessel, and the best of the Allan and Canadian Northern vessels had also been taken. He continued that efforts were being made to obtain the release of some of the larger freighters, and he hoped that an arrangement would be made by May 1. In the meantime the companies were unable to carry out their mail contracts with the Dominion Government, and in consequence no subsidies were being paid. The arrangement made with the Admiralty for a French service of 18 vessels, provided that such service would be limited to Government supplies.

### Maritime Provinces and Newfoundland.

The steamships Ocamo and Oruru, owned by Pickford and Black, which have been laid up at Dartmouth, N.S., for some time, have been sold for West Indies service.

It is reported from Nova Scotia ports that about 16 sailing vessels owned in the Province will engage in the trans-Atlantic trade this season, carrying deals to Great Britain. Several have already sailed and others are loading at various ports.

The Department of Marine has announced that the channel of the Elliott, or West River, from the West River bridge to Bonshaw bridge, P.E.I., for four miles has been marked by 20 hardwood bushes on the starboard side and by 20 spruce bushes on the port side.

The Department of Marine announces that before May 31 the characteristic of the light shown from the Little Hope gas and whistling buoy, on the south coast of Nova Scotia, about 1¼ miles from the lighthouse on Little Hope islet, will be changed from occulting white to occulting red.

The Public Works Department's s.s. Tyrian is undergoing considerable overhaul and repairs at Halifax, N.S. The work is covered by three contracts, one for repairs and renewals to machinery for \$16,750, for new boilers \$9,200, and for removal of old boilers, alterations to boiler room and installation of new boilers \$9,841.

The s.s. Senlac, owned by H. McC. Harb, Halifax, N.S., which has been laid up at Dartmouth, N.S., for some time, is reported to have been sold to R. P. Bell, of Halifax. She was built at St. John, N.B., in 1904, and is equipped with engine of 66 n.h.p., driving a screw. Her dimensions are, length 182.4 ft., breadth 33 ft., depth 16.1 ft.; tonnage, 1011 gross, 615 register. She was formerly operated between St. John and Halifax.

The winding up of the May Queen Steamship Co., Ltd., was before the courts at St. John, N. B., Apr. 6, when the question of the handing over to the curator of the estate, of \$4,000 which had been paid to certain creditors, was dealt with. It was ordered that \$500 retained by Capt. F. H. Colwell, for a personal claim, be handed over, and if authority for payment of the other amounts cannot be shown, they must also be handed over.

A Montreal press report states that the Black Diamond Steamship Co., controlled by the Dominion Coal Co., and which has operated a freight and passenger service between Montreal, Prince Edward Island, Sydney and St. John's, Nfld., for several years, will discontinue such service this season. It is stated that the service has been unprofitable during the last few years. Two of the vessels, the steamships Cacouna and City of Sydney, the latter having been purchased especially for this service, have been lost, and the present market rates make it impossible to build or purchase suitable vessels to replace them.

The Minister of Marine, replying to questions in the House of Commons, Apr. 8, regarding the s.s. Noreen, chartered by the Marine Department, stated that she was formerly owned by the Dominion Government, and was sold to A. B. Crosby, Halifax, N.S., Jan. 31, 1912, for \$900, and was formerly known as Lily. She was subsequently rebuilt by her owner, and the name changed. She is now engaged in transporting Marine Department employes between Halifax and Dartmouth, at \$20 a day, the owner providing the crew of three, the Government providing a man to handle moorings, gangways, etc. The Government also supplies coal and water, the owner providing oil and supplies. She has been under charter since Sept. 18, 1914, and \$2,800 had been paid under the charter, up to Feb. 28, and \$506 for coal, etc. She was originally built at Dartmouth, N.S., in 1878, and is screw driven by engine of 17 n.h.p. Her dimensions are, length 65.6 ft., breadth 16.5 ft., depth 6.6 ft.; tonnage, 46 gross, 31 register.

### Province of Quebec Marine.

The Lachine Canal was emptied Apr. 1, for the annual cleaning.

The first steamship to leave Quebec this season was the Savoy, Apr. 5, for north shore and Anticosti Island points.

At a meeting of the Montreal City Council Apr. 12, a report of the Board of Control recommending the appropriation of \$900 for the purchase of a vessel for operation to St. Helen's Island was withdrawn, the Mayor announcing that he would purchase a vessel to be used for such service.

The Dominion Government has entered action against the owners of the s.s. Langan, claiming \$400,000 as damages for the loss of the s.s. Montmagny, which was sunk in collision in the St. Lawrence River, Sept. 18, 1914, when 14 lives were lost. The case is entered for hearing on May 18.

The Department of Marine has established a black wooden spar buoy at the south edge of the channel between Montreal and Longueuil, at the 3 ft. spot midway between Montreal and the Longueuil ferry wharf, 3,250 ft. from Ile Ronde lighthouse, near the alignment of the Ile Ronde range lights.

When interviewed on his resignation as Chairman of the Quebec Harbor Commissioners, Sir William Price stated that of the programme of harbor improvements, all that remained to be done, was the completion of the Louise embankment in the St. Charles River, which was interfered with to some extent last season. The erection of the grain conveyors for the new elevator would probably not be undertaken until 1916.

The Levis Ferry Ltd., which has the exclusive right to operate a ferry service between Quebec and Levis, is applying to the authorities at both points, for approval of an increased tariff of rates and a decreased schedule. The contract with the company dates from May 1, 1910, for 15 years, the sum payable by the company for such rights being \$5,250 a year, and the tariff and schedule were embodied in the bylaws confirming the contract, which can only be changed by a majority vote of the councils concerned. The proposals are meeting with considerable opposition.

The Quebec Corporation of Pilots has asked the Marine Department to have the wrecked s.s. Montmagny removed from the channel at Crane Island, as it is a menace to navigation. The Minister of Marine replying to a question in the House of Commons, Apr. 1, stated that the wreck lies 600 ft. distant from the axis of the channel marked by the Hospital Rock range lights, and therefore forms no obstruction to navigation. The Department will consider the question of removal, when the wreck has been examined after the opening of navigation.

### Ontario and the Great Lakes.

The Welland Canal was re-opened for navigation, Apr. 15.

The Cornwall Canal was opened for navigation, Apr. 15, the earliest for 12 years.

The Dominion Public Works Department will receive tenders to May 20, for building a freight shed, baggage, and waiting rooms, on the wharf at Belleville, Ont.

The light shown on the west end of Depot Island, near Parry Sound on the east side of Georgian Bay, has been changed from occulting red to occulting white.

It is announced that Canadian fishing tugs on Lake Erie are being numbered, and the names of the fishing firms are being placed on buoys marking the territory of



each to facilitate supervision by Government patrol boats.

The Imperial Oil Co.'s s.s. *Imperial*, operating on the Great Lakes, is reported to have had certain alterations made at Sarnia, to fit her for ocean service between Vancouver and Peru, but we are officially advised that there is no intention of sending any of the lake vessels to the Pacific.

A concrete pier and lighthouse are under construction in the Detroit River at the head of the Livingstone channel, at the junction of Ballard reef and Livingstone channels. Vessels are warned to go slow when passing the work so that the contractor's operations shall not be interfered with nor the plant and work endangered.

The icebreaking steam tug J. T. Horne, which has been operating on the Great Lakes, chiefly in Thunder Bay, for the past two years, and which was announced to have been sold to the Russian Government recently, sailed from Sydney, N.S., early in April, for Archangel, where she will be used in keeping the harbor free from ice.

The lighthouse on the breakwater at the entrance to Lionhead harbor on the west side of Georgian Bay, which was destroyed in the storm of Nov. 1913, has been repaired, and fixed on the extremity of the undamaged portion of the breakwater. A red painted spar buoy has been moored at the extremity of the damaged portion of the breakwater.

The collision of Canada Steamship Lines s.s. J. H. Plummer and Port Colborne and St. Lawrence Navigation Co.'s s.s. *Algonquin*, May 7, 1914, was argued before an arbitration board at Toronto, Apr. 13, when evidence on both sides was gone over, and decision reserved. It appeared that the accident occurred in a heavy fog, and that the signals were not properly understood.

The Niagara, St. Catharines and Toronto Navigation Co.'s s.s. *Dalhousie City* arrived at Toronto, Apr. 1, being the first vessel to enter Toronto harbor for this season. This is the fourth successive year this vessel has opened navigation into Toronto. Capt. Maddocks received the silk hat awarded by the harbor master to the captain of the first vessel to enter the harbor from an outside point.

The Algoma Central Steamship Line s.s. J. Frater Taylor, which was the first vessel from an outside point to enter Fort William harbor this season, for which the captain was awarded the harbor master's silk hat, was reported to be aground, while down bound with grain, at Blake's Point, off Isle Royale, Apr. 21. She was subsequently released and taken to Port Arthur for examination.

The United States Lake Survey reports the levels of the Great Lakes in feet above tidewater, for March, as follows,—Superior 601.50; Michigan and Huron 579.57; Erie 571.37; Ontario 245.27. Compared with the average March levels for the past ten years Superior was 0.13 ft. lower; Michigan and Huron 0.56 ft. lower; Erie 0.38 ft. lower, and Ontario 0.63 ft. lower. It was anticipated that during April, Superior would remain stationary; Michigan and Huron would be 0.3 ft. higher; Erie 0.7 ft. higher and Ontario 0.6 ft. higher.

The proposal of the Canadian Drydock and Shipbuilding Co. to build a dry dock at Owen Sound, is again to the fore. In a recent interview, F. F. Wood, of Niagara Falls, who is interested in the scheme, is reported to have stated that the necessary financial arrangements had been made, and some time had been spent with the Public Works Department at Ottawa in relation to the plans, and he hoped to be able to obtain a Government subsidy for a dock of the first class type, instead of the second class, as at first proposed.

The Great Lakes Engineering Works is proceeding against A. B. Mackay, of Hamilton, Ont., in the Admiralty Court at Detroit, Mich., for \$21,000 for shortening and repairing the s.s. E. M. Peck, purchased by him after damage done to the vessel by boiler explosion in 1913. After the purchase, it was found advisable to reduce the length of the vessel to Welland canal size, and it is now considered that the charges are too high. The name of the vessel was recently changed to Malton, and she is now owned by A. E. Mathews, Toronto.

The Minister of Public Works, replying to questions in the House of Commons, Apr. 3, stated that since Jan. 1, 1913, the work done on the French River improvements consisted of the construction of the Little Chaudiere dam, in connection with which the rock excavation, camp equipment and surveys had cost \$101,067.34. The contractors are Jennings and Ross, and \$3,460 has been paid them for work on the substructure of the Big Chaudiere dam, the contract for the superstructure of which has not been let.

The Reid Wrecking Co., Sarnia, is reported to have sold the s.s. *Matoa* to Boston, Mass., parties, for the coast trade. It is said that a condition of the sale is that the vessel be cut in two for passage through the canals, and that this is being done at the Sarnia dry dock. The *Matoa* was built at Cleveland, Ohio, in 1890, and was formerly owned by the Pittsburg Steamship Co., Cleveland. She was wrecked during the storm of Nov. 1913, at Point aux Barques, abandoned by the owners, and subsequently salvaged by the Reid Wrecking Co., by whom she was repaired.

Lake Commerce, Ltd., Toronto, has acquired the s.s. *Arabian*, formerly owned by Canadian Lake Transportation Co., and latterly operated under J. W. Norcross' management. She was built at Hamilton, Ont., in 1892, and is a steel vessel with double bottom for water ballast, with wooden sheathing on the steel bottom. She is equipped with fore and aft compound engines with cylinders 20 and 40½ by 34 ins., 400 i.h.p. at 80 r.p.m., supplied with steam from one Scotch boiler 11¼ by 10¼ ft. at 107 lbs. pressure. Her dimensions are, length 178½ ft., breadth 31 ft., depth 13½ ft.; tonnage, 1,073 gross, 770 register.

The Owen Sound Board of Trade has not succeeded in its effort to get the C.P.R. to increase its vessel service at that port. George Bury, Vice President, C.P.R., was in Owen Sound recently and received a deputation on the subject. He has since communicated with the Chairman of the Board of Trade, stating that the company could not send another vessel there without interfering with the through passenger traffic. The Board of Trade has since invited Jas. Playfair, President and General Manager, Great Lakes Transportation Co., to visit the port and look over the situation, with the view of that company's vessels making calls there. Mr. Playfair is reported to have stated that if the company were guaranteed 250 tons of freight a week, a vessel would call there each week during the season.

### Manitoba, Saskatchewan and Alberta.

J. D. McArthur Co., contractors for the construction of the Alberta and Great Waterways Ry., will, it is said, build a large number of scows at Athabasca Landing this season, to convey supplies eastward for railway construction, by way of the Athabasca River.

The Peace River Tramway and Navigation Co. proposes to build a steamboat at Peace River Crossing, Alta., during the summer, to

run to Vermillion Rapids, where a tramway is to be built. The dimensions of the vessel will be, length 165 ft., breadth 35 ft., and she will be equipped with engine of 800 n.h.p. Accommodation will be provided for 110 cabin passengers and about 300 tons of freight.

The s.s. *Qu'Appelle*, which was formerly operated on Last Mountain Lake, Sask., by Wm. Pearson Co., Ltd., Winnipeg, but which has not been in service since 1913, will not be in service this year, unless the ending of the war and the consequent improvement in local business make it advisable. The increased railway service in the neighborhood formerly served by this vessel has made the venture less profitable than before.

### British Columbia and Pacific Coast.

The Dominion Government hydrographic steamship *Lillooet* has been overhauled and repaired at Esquimalt in readiness for her summer work along the coast.

The construction of the Grand Trunk Pacific dry dock at Prince Rupert is progressing rapidly, and it is reported that the work will be sufficiently advanced to take care of vessels early in June, and that it will be completed by the end of the year.

B. C. Mills Tug and Barge Co., Ltd., has been incorporated under the British Columbia Companies Act, with \$150,000 capital, and office at Vancouver, to own and operate steam and other vessels, and to carry on a general shipping and shipbuilding business.

A Dawson, Yukon, telegram of April 19 said the ice in the Yukon River was breaking up, the earliest date recorded, and that the river was open from Whitehorse, the head of navigation, to Lake Labarge, 16 days earlier than in 1914.

The Grand Trunk Pacific Coast Steamship Co. has recently renewed the insurance on its vessels, paying rates, for the steamships *Prince Rupert* and *Prince George*, 5½% against 5% last year; for the s.s. *Prince John*, 11½% against 8½%, and for the s.s. *Prince Albert*, 12% against 9% last year.

The Grand Trunk Pacific Coast Steamship Co.'s s.s. *Prince Rupert*, which had been moored at Seattle, Wash., since the outbreak of war, was taken to Esquimalt towards the end of March to be drydocked for overhaul and general repairs, prior to re-entering service to northern ports.

In response to questions in the Senate, Apr. 3, it was stated that the Government had equipped 3 tugs, 4 dredges and 1 rock breaker, on the Pacific Coast, with apparatus for burning fuel oil, at a cost of \$34,244. The approximate saving by this change is \$35,000, and there is an additional saving in operation which it was stated is difficult to estimate.

Despite the early breaking up of the ice in the Yukon River, White Pass and Yukon Ry. officials are reported to have stated in Seattle, April 20, that navigation on that stream will not open up until June 1, the low stage of the water along the 50 mile stretch between Whitehorse and Lake Labarge make it inadvisable to start the boats ahead of the usual time.

The Grand Trunk Pacific Coast Steamship Co. has announced the withdrawal of the s.s. *Prince John*, and the discontinuance of the service from Vancouver to the Islands generally and Stewart. A fortnightly service to Massett and the Naas River is however being maintained, providing a weekly service between Vancouver and Prince Rupert in addition to that previously performed by the s.s. *Prince George*.

A motion to consider the expediency of authorizing the Vancouver Harbor Commis-



sioners to make bylaws for the imposition of tolls, rates, etc., other than those already authorized, and that such additional tolls and fees be retained by the commissioners and for part of their general revenue, came up for discussion in the House of Commons, Mar. 29, and Apr. 1, when the matter was dropped, the Minister of Marine not being prepared to proceed.

### Mainly About Marine People.

**Capt. M. McLeod**, a former harbor master at Vancouver, B.C., died there, Apr. 6.

**Sir William Price**, Chairman, Quebec Harbor Commissioners, has resigned, owing to pressure of private business.

**Capt. Allen McNabb**, who died at Vancouver, B.C., Apr. 6, was, for many years in C.P.R. service on its trans-Atlantic vessels.

**Alex. Elder**, founder of Elder, Dempster and Co., who died Jan. 25, left an estate of the gross value of £309,068 19s. 11d.

**James Ronan**, purser, Northern Navigation Co., died at Sarnia, Ont., Apr. 19. He had been in the company's service over 20 years.

**James Currie**, who died at Toronto, Mar. 31, aged 63, was one of the founders of the works there, now owned by Polson Iron Works, Ltd.

**A. A. Booth**, Chairman, Cunard Line, has been appointed chief organizer of the British Government's scheme to increase the output of war material.

**William Burrill**, who died at Yarmouth, N.S., Mar. 26, aged 74, was engaged in ship-building in the early days of sailing vessels, and latterly was in the ship outfitting business.

**W. F. Cloney**, heretofore General Agent, Canada Steamship Lines, Buffalo, N.Y., has been appointed General Agent at Rochester, N.Y., and has been succeeded at Buffalo, by **J. V. Foy**, heretofore General Agent at Chicago, Ill.

**J. W. Norcross**, Vice President and General Manager, Canada Steamship Lines, Ltd., placed the s.s. Macassa at the disposal of the Hamilton contingent of the 19th Battalion in training at Exhibition Park, Toronto, when they visited Hamilton, Apr. 10.

**B. R. Hepburn**, M.P. for Prince Edward, Ont., and formerly President of the Ontario & Quebec Navigation Co., prior to its absorption by the Canada Steamship Lines, has been renominated as the Conservative candidate to contest the riding at the next Dominion elections.

**J. S. Byrom**, who has been appointed Superintendent of Great Lakes Steamers, C.P.R., Port McNicoll, Ont., vice S. Buchanan retired, has been with the Canadian Pacific Steamships and allied lines for 26 years, for the last 14 of which he was port steward of the British Columbia Coast Service at Vancouver.

**W. Newman**, Works Manager, Polson Iron Works, Toronto, who superintended the construction of the Ontario Car Ferry Co.'s car ferry, Ontario No. 2, which was launched Apr. 3, was presented with a diamond ring by the officials and employees of the Polson Iron Works, the evening before the launching.

**G. M. Booth**, a director of the Booth Steamship Line, and other shipowning companies, Liverpool, Eng., has been appointed by the Secretary of State for War to take charge of the recently inaugurated committee which is to take the necessary steps to provide additional labor to ensure that the supply of munitions of war shall be sufficient to meet all requirements.

**Capt. Robt. McKay**, who died at Kingston, Ont., Apr. 17, aged 91, sailed on the Great

Lakes for several years, and subsequently lived at Fulton, N.Y., moving to Kingston a few years ago. His grandfather was a ship carpenter in the British Navy and came to Canada many years ago, working in the old ship yard at Point Frederick, where he helped to build warships for the war of 1812.

**Sam Buchanan**, who retires from C.P.R. service, May 1, after 34 years with that company, was born at St. Catharines, Ont., March 1853, and entered transportation service, Nov. 4, 1871, since when he has been to Mar. 17, 1881, brakeman and conductor, G.T.R., Point Edward, Ont.; June 10, 1881 to Apr. 15, 1885, conductor, C.P.R., Winnipeg and Brandon, Man.; June 17, 1885 to Mar. 31, 1890, General Foreman, Freight Department, C.P.R., Owen Sound, Ont.; Apr. 1, 1890 to Jan. 22, 1905, agent, C.P.R., Windsor, Ont.; Jan. 23, 1905 to June 16, 1908, Superintendent Terminals and Ferries, C.P.R., Windsor, Ont.; June 17, 1908 to Apr. 30, 1915, Superintendent, Upper Lake Steamship Service and Ferries, for the first four years at Owen Sound, and later at Port McNicoll, Ont. Mr. Buchanan will reside at Port McNicoll for a few months after which he will remove to Detroit, Mich.

### Regulations Respecting Examinations of Masters and Mates.

New regulations have been issued by the Government relating to the examinations of masters and mates of inland and coasting vessels, providing that a candidate must not be less than 19 years old, and must have served two years at sea, or must have served one year as mate of a passenger or freight steamship on the Great Lakes, while holding a certificate of competency as mate of a passenger steamship on inland waters. For master's certificate, a candidate must not be less than 21 years old and must have served three years at sea, one year of which he must have served as mate while holding a mate's certificate, or he must have served one year as master of a passenger or freight steamship on the Great Lakes, while holding a certificate of competency as master of a passenger steamship on inland waters. In addition to the qualification for mate, a candidate will be required to know how to act in case of stranding, to answer any questions respecting currents and aids to navigation, which the examiner may think proper to ask, to answer any other questions the examiner may think necessary to ask him concerning the duties of a master of the particular class of sailing vessel or steamship for which he desires a certificate. Service on the inland waters will not be accepted as qualifying for examination for coasting certificates, except under conditions specified in pars. 21 (b) and 24 (b) of the old rules and regulations.

### Suggested Deepening of the St. Lawrence River.

The report of the commission, consisting of E. E. Haskell, Dean of the College of Civil Engineering, Cornell University; V. W. Forneret, Superintending Engineer, St. Lawrence Ship Channel, and W. J. Stewart, Dominion Government Hydrographer, presented to Parliament recently, states that it would cost about \$487,361 to raise the level of the St. Lawrence River by a system of retaining dykes, and the damming of subsidiary channels. The level which has suffered most is that in Montreal harbor, due to various depletions, but mostly to dredging at St. Mary's Rapids. It is suggested that the water be backed up into Montreal harbor, and the level raised 2 ft. 7 ins., by the

obstruction of the river's outflow at suitable points. It is calculated that by raising the water 2 ft. at Lake St. Peter, it would be raised 19 ins. at Sorel, 11 ins. at Longue Pointe and 11 ins. in Montreal harbor. An additional rise in Montreal harbor and at Longue Pointe could be provided for by damming between the islands at the head of the lake. Another dam is suggested at Ile a Bague and Ile Bellegarde. The suggested dams with their estimated cost are as follows:

Rock filled dam, no. 3, Chenal du Castor (between Ile Castor and Ile du Pads), \$25,322.

Rock filled dam, no. 4, Chenal du Pads (between Isle du Pads and Ile St. Ignace), \$16,135.

Rock filled dam, no. 5, Chenal aux Ours (between Ile Madame and Ile aux Ours), \$13,107.

Rock filled dam, no. 7, Chenal Corbeaux (between Ile de Grace and Stone Island), \$23,222.

Rock filled dam, No. 9, Chenal des Barques (between Ile aux Barques and Ile au Moins), \$63,870.

Rock filled dam, at Pointe du Lac, at foot of Lake St. Peter, \$141,960.

Rock filled dam, at Repentigny, between Ile a Bague and Ile Bellegarde, \$203,745. Total, \$487,361.

The stretch between Lake St. Peter and Quebec offers considerable difficulties due to tides, etc., and further examination and tests will be made on portions of the route. There has been a lowering of the level at Lake St. Louis of 3.4 ins. due to diversion of water to the Chicago Drainage Canal, which also contributes to the lowering of the water at Montreal.

### Grain Overages and Shortages.

At various meetings held in the earlier part of the year, the matter of grain overages and shortages was dealt with by vessel owners on the Great Lakes generally, and certain clauses were approved, which were to be added to the bill of lading in shipping cargoes of grain. It was generally agreed that some change was necessary in the Canada Grain Act, to give effect to the various recommendations, and this has now been made. The amendments made provide that the inspector's certificate of grade, as well as the weigh master's certificate as to weight, shall be prima facie evidence of the facts contained therein; that no grain shall leave a terminal elevator without being officially weighed, and the official certificate shall be final, subject to re-investigation as provided for in sec. 120 of the Canada Grain Act. In explanation of the latter amendment, it was announced by the Solicitor-General, in the House of Commons, Apr. 5, that the effect would be to make the official weight certificate conclusive evidence as to weight, but that it would only apply where weigh masters were appointed and under the control of the Grain Commissioners, so that the eastern terminal elevators were not affected. Another amendment provides that certain portions of the act shall apply to all water carriers other than ocean carriers, making it clear that it applies to carriers between the western and eastern elevators, in so far as they carry western grain only.

The act was further amended by adding after sec. 120, the following:

"120a. The board shall also receive and investigate all complaints in writing, signed by any of any shortage in grain upon the delivery of same from an elevator to a vessel or from a vessel to an elevator, and shall have power to assess or apportion the loss arising from such shortage amongst the elevator operators, water carriers, and shippers, but not the receiver."



The said board, and the finding of the board and such assessment or apportionment certified on the part of a majority of the board shall be binding on and sent to all persons concerned in such finding, assessment or apportionment, and shall be final and shall be enforceable in any court of competent jurisdiction.

"120b. The board may make regulations governing the responsibility for and the disposition of shortages and overages of grain upon delivery of same from an elevator to a vessel, or from a vessel to an elevator, and may assess in such manner and in such amount as it may deem just and proper, contributions from elevator operators, water carriers and shippers, or from any of them, in favor of the board or otherwise, for the purpose of providing against shortages."

"Provided that nothing contained in this section shall limit the powers of the board under the preceding section."

In pointing out the importance of this amendment, the Solicitor-General gave a slight history of the case, stating that a conflict had arisen between the lake carriers and the western shippers, the elevators and lake carriers endeavoring to put into effect a form of bill of lading which would have turned back upon the shippers the entire responsibility for any shortages that might occur during transit from western to eastern elevators. Some of the companies have found themselves at the end of the year loaded with considerable loss by reason of shortages, arising from lesser weight being given to the carrier when he went to deliver this grain to the eastern elevator for transhipment to barges and thence to ocean vessels, than the weight given him by Government certificate out of the western elevator. Similarly other carriers had overages by the reverse process, the eastern weight being greater than the western weight. There has been a conflict of interests and efforts to bring the parties together have not met with final success. The intention of the amendment is to provide against two classes of case, the only ones that can arise, the first being where it is possible for the board to fix the responsibility for the shortage to, say, the western elevator operator, or the lake carrier; and the second, where no evidence is available to enable the board to fix the responsibility, which is a frequent occurrence. The amendment provides that the board must investigate complaints of shortage or overage, and gives power to determine who shall stand the loss of the shortage, or get the benefit of the overage. It may also assess loss against all the parties concerned, the scale of contribution being fixed consistent with the responsibility for the loss.

**Great Lakes Register**,—8¼ by 12 ins., leather covered. Great Lakes Register, Rockefeller Building, Cleveland, Ohio, \$25 a year including supplements, by subscription. The 1915 edition of this register has been issued to subscribers. It is published under the control of the lake underwriters, and is adopted by them as their official classification register, on which to base all rates of insurance for both hulls and cargoes. The rules for the classification and construction of steel, iron and wood vessels navigating the Great Lakes also have the approval of Bureau Veritas, and by arrangement the Great Lakes Register Committee can issue certificates of classification for overseas navigation to lake built vessels, the construction and equipment of which are suitable for such navigation. There is a complete list of all Canadian and U. S. vessels operating on the Great Lakes, with very full details of their construction and equipment, and varied information regarding shipbuilders and tonnage turned out of their yards, dry docks with their capacity and location, etc. The whole of the matter is arranged in very convenient form for quick and easy reference, which makes it indispensable to those whose business is concerned with the navigation of the Great Lakes.

## Telegraph, Telephone and Cable Matters.

Telegraph connection, over Dominion Government lines, was made with Fort McMurray, Alta., Mar. 25.

Preparations for the Association of Railway Telegraph Superintendents' annual convention, at Rochester, N.Y., June 22 to 24, are about completed.

G. D. Perry, General Manager, Great North Western Telegraph Co., returned to Toronto recently after a trip of inspection of the company's western offices, as far as Saskatoon, Sask.

The Great North Western Telegraph Co. has opened offices at Glenora, Langruth, Narcisse, Poplarfield, Wakopa, Man.; Rocky Inlet, Ont., and Mossbank, Sask., and has closed its offices at Lavoy, Alta.; Beaver, Berton, Brunkild, Enterprise, Methven, Junc., Man.; Richmond, Que., and St. Gregor, Sask.

The Pacific Cable Board has reduced the charge per word from 58 to 50 cents on ordinary messages to New Zealand, Fiji and Norfolk Islands, and from 29 to 25 cents a word on deferred cables. For week end lettergrams, the charge has been reduced from \$2.90 to \$2.50 for 20 words, and from 15 to 13 cents a word for extra words.

Baron de Reuter, the head of Reuter's Telegram Co., the great news gathering organization, committed suicide, Apr. 19, at Reigate, Surrey, Eng., owing to despondency caused by his wife's death. The headquarters of the company, which were in France, were transferred to London, Eng., on the completion of the cable between England and France in 1851.

The Western Union Telegraph Co.'s gross revenue for 1914 was \$46,264,776, and net income \$5,371,394, after paying interest on funded indebtedness. Dividends paid amounted to \$3,988,886, the surplus being \$13,531,921 at Dec. 31. The assets are valued at \$135,586,383. The net revenue for the year was \$2,136,400 greater than in 1913, and it is stated that \$1,475,000 of this was due to the war.

## Among the Express Companies.

The Canadian Northern Ex. Co. has opened an office at Mossbank, Sask.

R. Stewart, Vice President and General Manager, Great Northern Ex. Co., was in Vancouver, B.C., at the end of March, inspecting the company's offices.

H. Coneybeare, a Canadian Ex. Co.'s driver, who, it was reported, decamped from Lindsay, Ont., a short while ago with a package of Home Bank bills, valued at \$3,000, was arrested in Edmonton, Alta., Apr. 2, with \$2,500 of the bills in his possession. He was taken back to Lindsay.

The Canadian Express Co.'s annual meeting was held at Montreal, April 19. The directors who were elected for the current year are: E. J. Chamberlin, Chairman of the Board; J. Pullen, President; F. Scott, Secretary-Treasurer; J. E. Dalrymple, H. G. Kelley, Hugh Paton.

The Canadian Ex. Co.'s returns for Nov., 1914, show charges for transportation \$252,264; express privileges \$124,940; operation other than transportation \$4,287; total operating revenues \$132,151; operating expenses \$128,240; net operating revenue \$3,910; express taxes \$4,000; operating income \$89; against \$254,305 charges for transportation; \$123,873 express privileges; \$7,242 operation other than transportation; \$137,673 total operating revenues; \$143,257 operating expenses; \$5,584 net operating revenue; \$2,850 express taxes; \$8,434 operating income for Nov., 1913.

## Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

**Ohio Brass Co.**, Mansfield, Ohio, has issued a bulletin "Electric Railways, Mine Haulage and Power Transmission."

**Canadian Car & Foundry Co., Ltd.**, G. T. Merwin, heretofore with the W. W. Butler Co., Ltd., Montreal, has been appointed to the Canadian Car & Foundry Co.'s sales staff.

**The Fairmont Machine Co.**, Fairmont, Minn., announces a change of name to one more in keeping with its product, and also an increase of the authorized capital stock to \$1,000,000 to meet a demand of increasing business. The name will hereafter be Fairmont Gas Engine and Railway Motor Car Co.

**The Ohio Brass Co.**, Mansfield, Ohio, has issued a folder, O-B Catenary Materials, giving illustrations of a number of installations, including Montreal & Southern Counties Ry. It is stated that the Chicago, Milwaukee & St. Paul Ry. has ordered approximately 100,000 O-B hangers for the second section of its new electrification and that it will use about 67,000 O-B type X strain insulators on both sections.

**Mussens', Limited** (in liquidation), Montreal, have issued a circular over the signature of W. H. C. Mussen, President, from which the following are extracts: "J. J. Robson, chartered accountant, of Montreal, who was recently appointed provisional liquidator, has, by order of the court, been appointed permanent liquidator to this company. The court has also granted our application to be allowed to continue the business for a period of six months. We feel able to demonstrate to our creditors that we will succeed in the efforts which will be put forward to reduce our stock, collect our open accounts and materially reduce overhead charges, with a view to getting into a position to reorganize and continue in business. While we are in liquidation, we are carrying on an active campaign for business, and we trust that we may continue to receive your support. We have a good connection throughout the country and all purchases made by us from now on will be paid for by the liquidator. We know that it will take some time to achieve the result at which we are aiming, but if we continue to receive the support of our principals as in the past, we are satisfied we can show good results and ultimately re-establish this business on its old footing. Since the liquidation proceedings were put into effect, we have been flooded with letters from the manufacturers, as well as from our customers, extending their hearty support and assuring us of their continued patronage. We, therefore, take this opportunity of thanking our friends for this evidence of confidence in us and in our ability to win out. We also desire to impress upon our customers the fact that we are carrying on business as usual, and that, although we were always pleased to receive their orders, we are now more anxious than ever to be favored with same. We ask our principals to continue the support which has been so freely given us in the past, and we ask our customers to give us an opportunity of supplying them with any material which they may require. All inquiries will be promptly attended to and orders will be filled without delay."



### Transportation Conventions in 1915.

May 4-7.—Air Brake Association, Chicago, Ill.  
 May 12.—American Association of General Baggage Agents, Los Angeles, Cal.  
 May 17-19.—Railway Storekeepers' Association, Chicago, Ill.  
 May 17-20.—International Railway Fuel Association, Chicago, Ill.  
 May 19.—Association of Railway Claims Agents, Galveston, Tex.  
 May 19.—American Railway Association, Atlantic City, N.J.  
 May 18-21.—American Association of Freight Agents, Richmond, Va.  
 May 20-21.—American Association of Railroad Superintendents, San Francisco, Cal.  
 May 26-28.—Master Boiler Makers' Association, Chicago, Ill.  
 June 9-11.—American Railway Master Mechanics' Association, Atlantic City, N.J.  
 June 14-16.—Master Car Builders' Association, Atlantic City, N.J.  
 June 15.—Train Despatchers' Association of America, Minneapolis, Minn.  
 June 16.—Freight Claim Association, Chicago, Ill.  
 June 22-25.—Association of Railway Telegraph Superintendents, Rochester, N.Y.  
 June 23-25.—Association of Transportation and Car Accounting Officers, Niagara Falls, N.Y.  
 July.—American Railway Tool Foremen's Association.  
 July 14-17.—International Railway General Foremen's Association, Chicago, Ill.  
 Aug. 17.—International Railroad Master Blacksmiths' Association, Philadelphia, Pa.  
 Aug. 19, 20.—American Association of Railroad Superintendents, San Francisco, Cal.  
 Sept. 14-16.—Roadmasters' and Maintenance of Way Association, Chicago, Ill.  
 Sept. 14-17.—Master Car and Locomotive Painters' Association of the United States and Canada, Detroit, Mich.  
 Sept. 21-24.—Railway Signal Association, Salt Lake City, Utah.  
 October.—American Association of Dining Car Superintendents.  
 Oct. 4, 5.—American Association of Traveling Passenger Agents, Boston, Mass.  
 Oct. 4-8.—American Electric Railway Association, San Francisco, Cal.  
 Oct. 5-7.—Railway Fire Protection Association, Chicago, Ill.  
 Oct. 13-15.—American Association of Railway Stationers, Chicago, Ill.

Oct. 19-21.—Maintenance of Way and Master Painters' Association of the United States and Canada, St. Louis, Mo.

Oct. 19-21.—American Railway Bridge and Building Association, Detroit, Mich.

### Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

Canadian Car Service Bureau—J. Reilly, Manager, 401 St. Nicholas Building, Montreal.

Canadian Electric Railway Association—Acton Burrows, 70 Bond Street, Toronto.

Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadian Express Building, Montreal.

Canadian Freight Association (Western lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.

Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July, and August.

Canadian Society of Civil Engineers—C. H. McLeod, 176 Mansfield St., Montreal.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Central Railway and Engineering Club of Canada—C. L. Worth, 409 Union Station, Toronto.

Meetings at Toronto, 3rd Tuesday each month, except June, July, and August.

Dominion Marine Association—F. King, Counsel, Kingston, Ont.

Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. E. Wolsey, 94 King Street West, Toronto.

Express Traffic Association of Canada—W. H. Burr, Chairman, Toronto.

Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.

Hydro-Electric Railway Association of Ontario, T. J. Hannigan, Guelph, Ont.

International Water Lines Passenger Association—M. R. Nelson, New York.

Niagara Frontier Summer Rate Committee—James Morrison, Montreal.

Nova Scotia Society of Engineers—A. R. McCleave, Halifax, N.S.

Quebec Transportation Club—A. F. Dion, Quebec.

Ship Masters' Association of Canada—Capt. E. Wells, 45 St. John Street, Halifax, N.S.

Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.

Western Canada Railway Club—Louis Kon Box 1707, Winnipeg. Meetings at Winnipeg, 2nd Monday each month, except June, July, and August.

## Ontario Jockey Club

TORONTO

## Spring Meeting

May 22nd to May 29th

### THE KING'S PLATE

The oldest fixture run continuously on this continent, will be run on

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## Why stop your trains at junction and passing track switches?

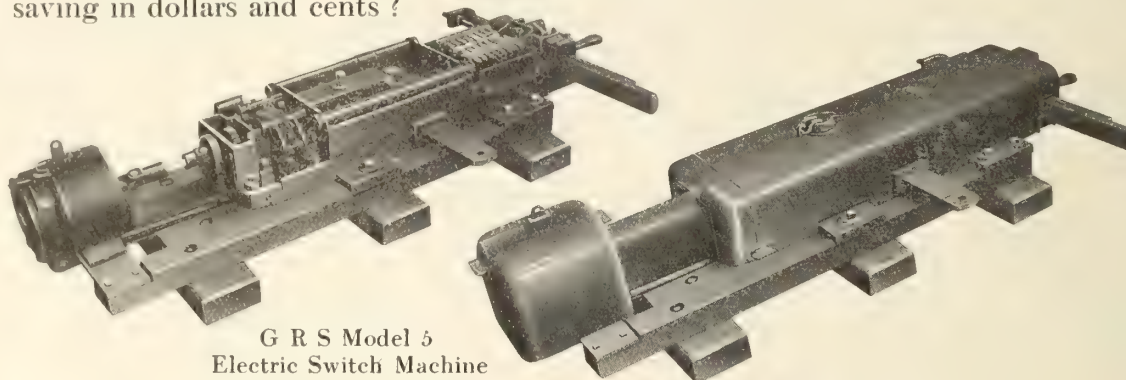
You can operate and maintain a *G R S Low Voltage Model 5 Switch Machine Installation* for less than \$150 per year.

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Ask yourself these questions :

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G R S Model 5  
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When you can effect a large yearly saving by installing *Model 5 Switch Machines* at your busy outlying switches and at the same time reduce train delays, improve your schedules, secure signal protection—when you can do all this at a considerable annual saving—then why stop your trains ?

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They can be safely operated from any telegraph office if desired.

### Features of the Model 5 Switch Machine

- 1 Low voltage machine will operate an average working switch on 12 volts with a current consumption of  $2\frac{1}{2}$  amperes in 25 seconds.
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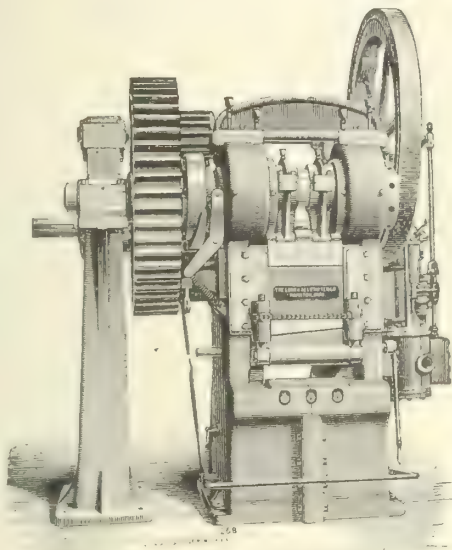
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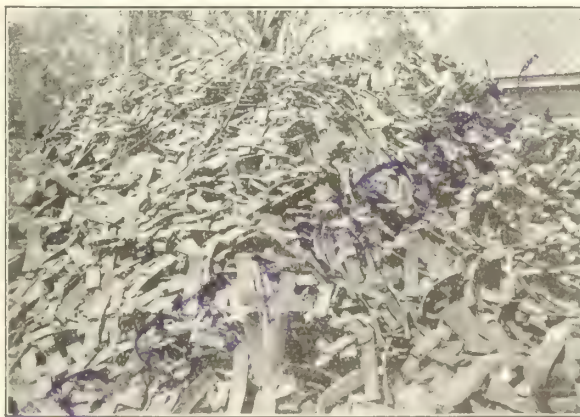
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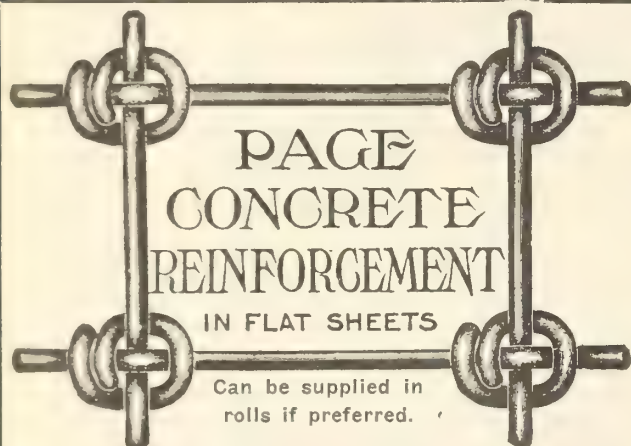
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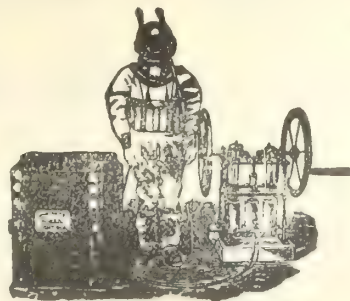
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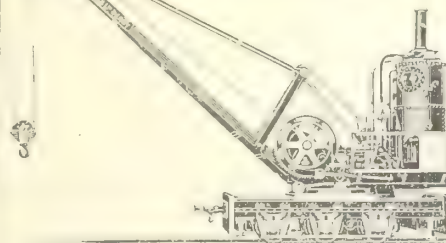
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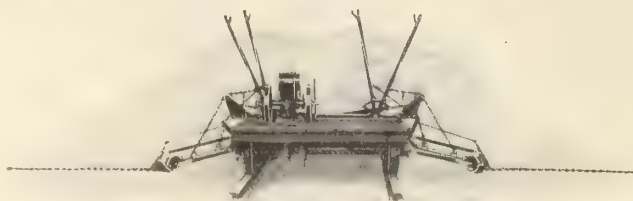
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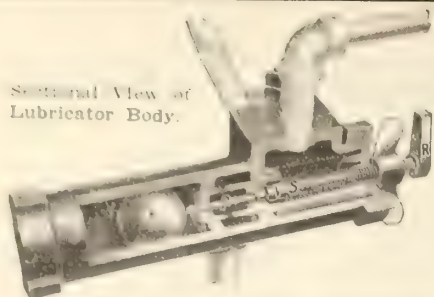
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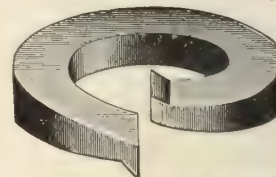
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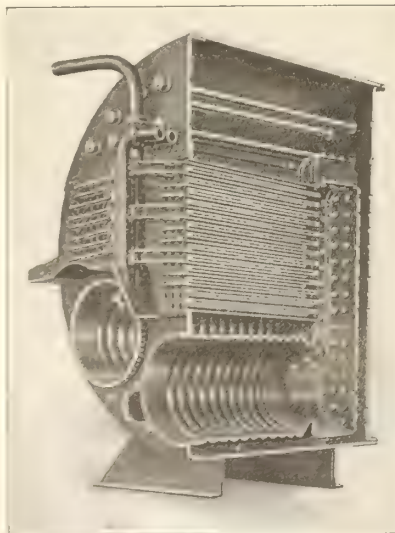
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NEW YORK



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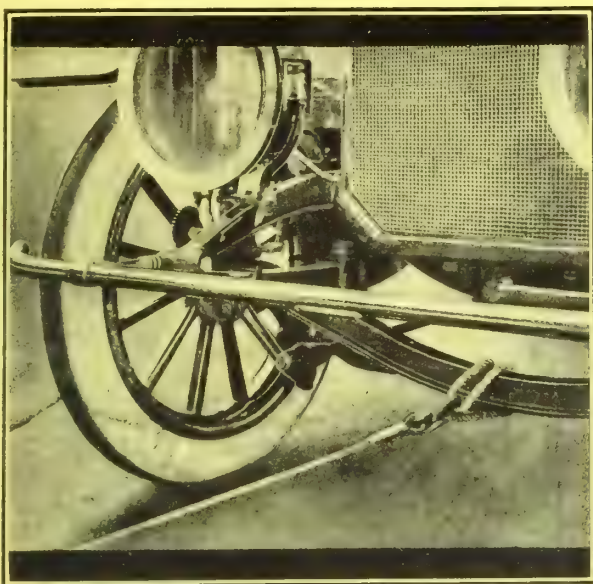
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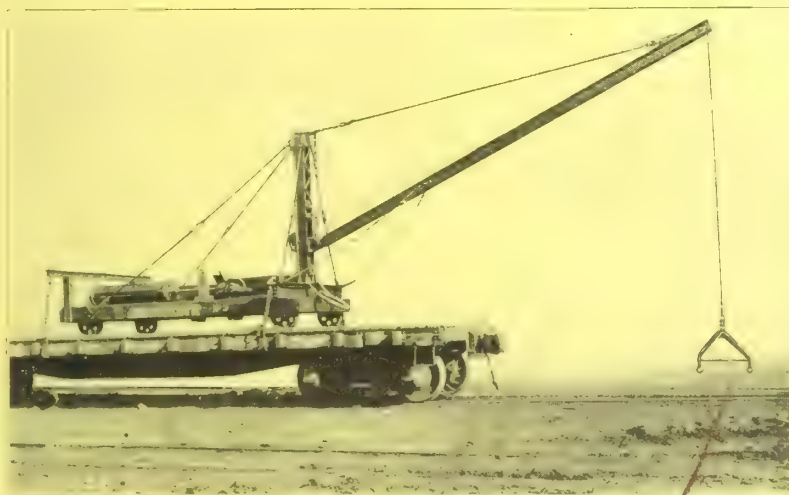




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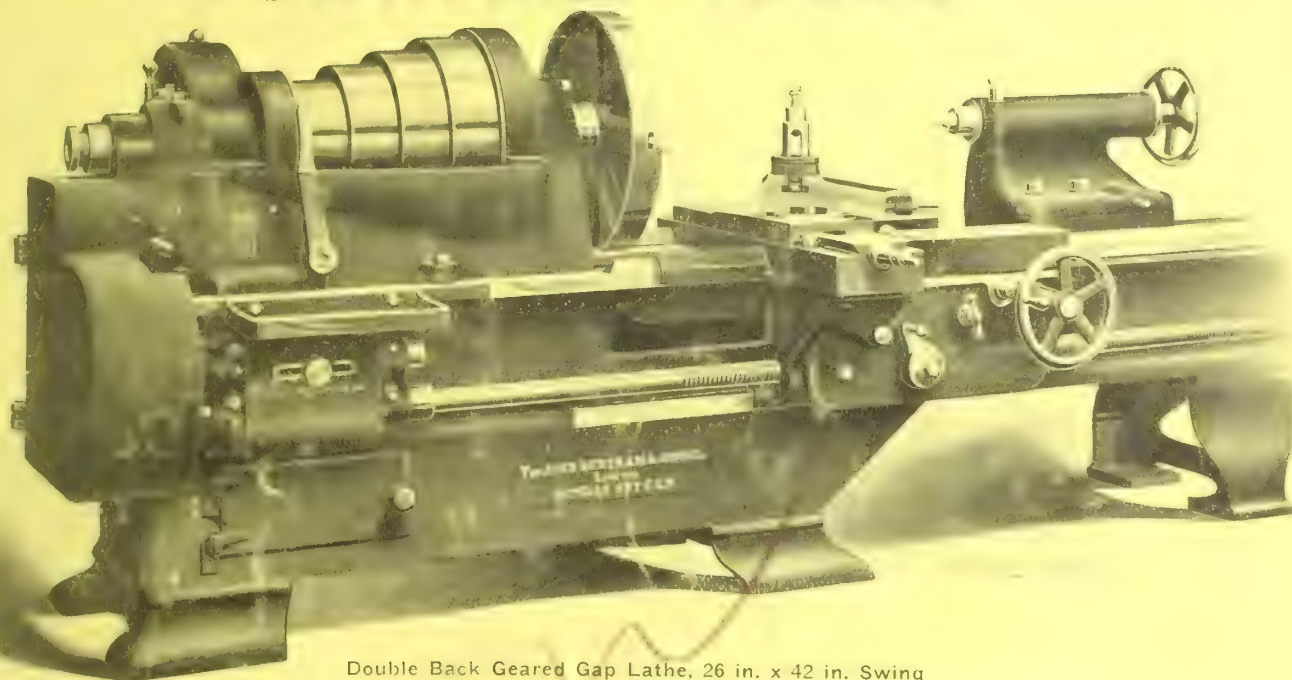
Number 208

TORONTO, CANADA, JUNE, 1915

Subscription Rates, Page 221



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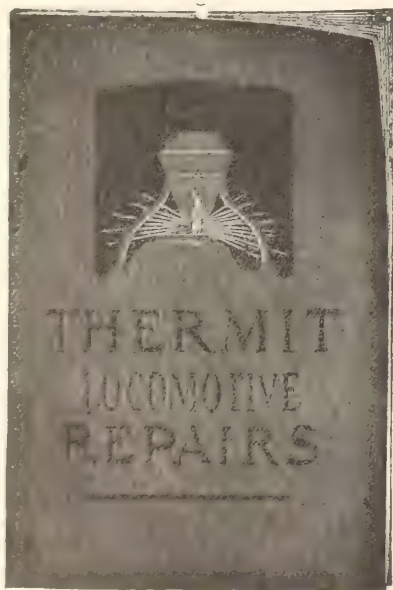
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***ELECTRIC RAILWAY LUBRICATION  
A SPECIALTY***

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Perfection Valve and Signal Oils

*Galena Railway Safety Oil*—Made especially for use in head-lights, marker and classification lamps.

*Galena Long Time Burner Oil*—For use in switch and semaphore lamps, and all lamps for long time burning, avoiding smoked and cracked chimneys and crusted wicks.

*TESTS AND CORRESPONDENCE SOLICITED*

**Galena Signal Oil Company**

WORKS

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Canadian Sales Office — 603 Shaughnessy Bldg., Montreal, Que.



# "DOMINION WIRE ROPE"

MADE IN CANADA



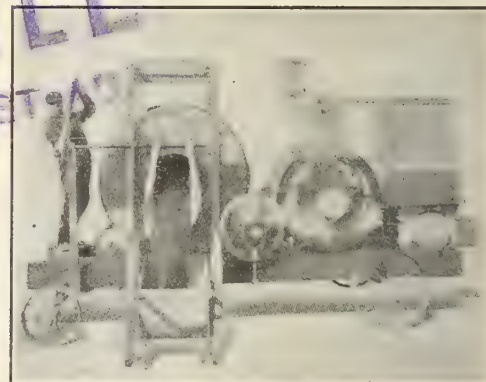
We Know Our Ropes are Good---  
But Our Customers Say  
They Are The "Best"

Stocks carried in Montreal, Winnipeg and St. Catharines

**The DOMINION WIRE ROPE CO., LIMITED, MONTREAL**

## When You Purchase a RANSOME

Concrete Mixer you obtain the most dependable machine to be had anywhere. Ransome Mixers are noted for their simplicity of construction, ease of operation and economy of operation.



Ransome Concrete Mixer, equipped with Gasoline Engine.

We supply you with equipment which will stand up and take hard knocks and will give you top notch service all the time.

**Ransome Mixers Supplied in all Sizes**  
with all styles of power

Let us prove the worth of a Ransome to you---it will make good with a vengeance.

*Catalogue Upon Request*

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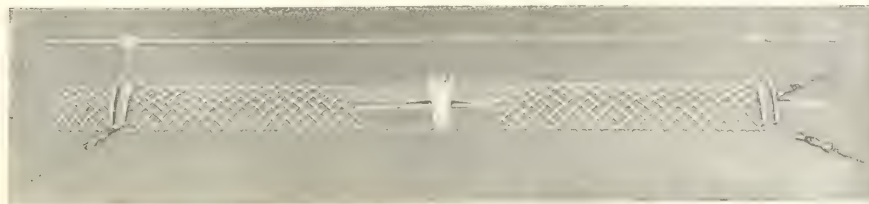
**F. H. Hopkins & Co**

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# NATIONAL TROLLEY GUARD

Offers dependable protection against electric cars being stalled  
on steam road grade crossings.



## The Open Wire Mesh

Requires practically no maintenance. It stays in position to catch the trolley and supply power to carry cars to safety at all times.

Wind and locomotive exhausts have little effect on it. Snow and ice cannot collect to any extent.

Light in weight and easily installed.

Over 100,000 feet in service.

**The Ohio Brass Company, Mansfield, Ohio, U.S.A.**

# GENERAL SERVICE CARS

## OTIS DUMP CARS

*PATENTED*

THE MOST PRACTICAL CAR FOR  
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DUMP THE MATERIAL AND  
SAVE TIME AND MONEY.  
ALWAYS READY FOR USE.

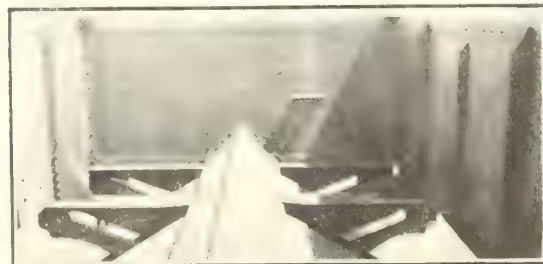


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THERE ARE THOUSANDS OF OTIS CARS  
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A SIMPLE EASY OPERATING LEVEL FLOOR GONDOLA CAR  
THAT DUMPS THE ENTIRE LOAD.

Made in All Sizes and Capacities for Regular or Special Requirements.

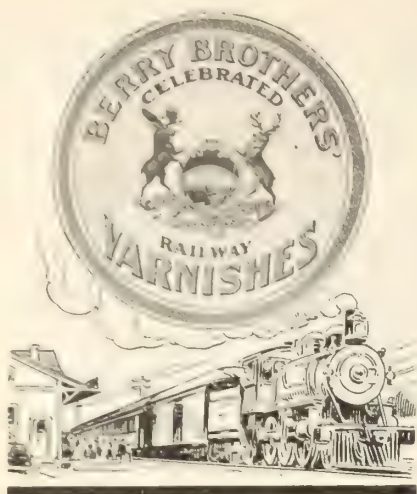


All Steel Car With Doors Open.

**THE HART-OTIS CAR CO., LIMITED : MONTREAL**

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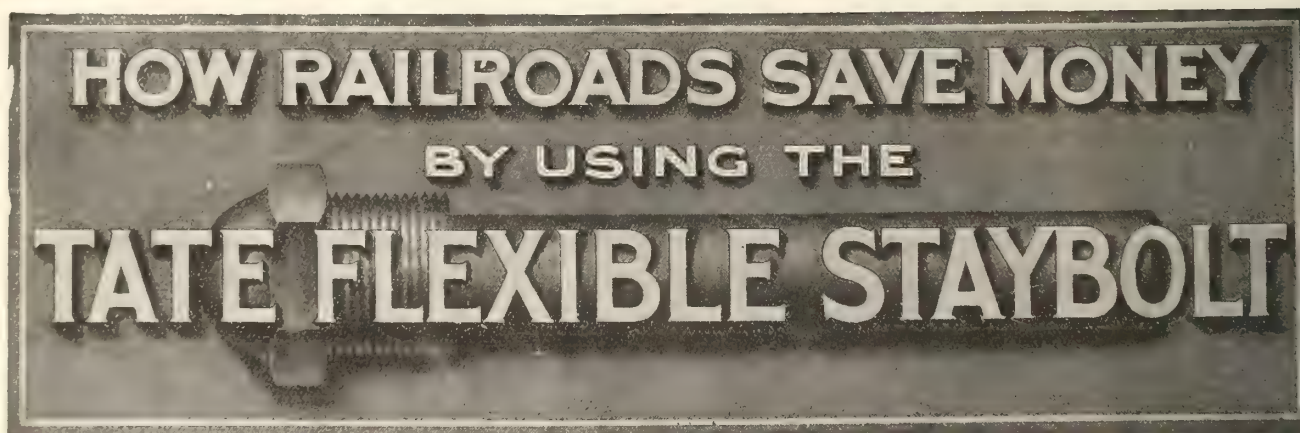
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*Let us send you some interesting literature on varnish problems*

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Accommodation, 350 rooms. Rates \$2.00 per day and upwards, European Plan.

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G. T. BELL,  
Passenger Traffic Manager,  
Montreal, Que.

### EXCELLENCE COUNTS!

## Excellence in Railway Service

is expressed in what the

### Grand Trunk System The Double Track Route

is offering the Travelling Public of Canada.

Unexcelled Road Bed  
Superior Dining Car Service  
Courteous Attention  
Modern Equipment

The Grand Trunk System reaches all trade centres in Eastern Canada, and is now a large factor in Western Canada traffic through the Grand Trunk Pacific Railway, recently completed to the Pacific coast.

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The Dearborn Company was organized because of the conviction on part of its founders that a scientific handling of the water treatment question was the only solution for the steam user of the troubles constantly arising as a result of scale formation, foaming, corrosion and pitting of boiler tubes, with all the attendant injury to the boilers, loss of heating efficiency, and waste of fuel.

Periodical removal of scale is unsatisfactory since there is a constantly increasing ratio of heat loss and fuel waste—as the scale gradually forms—aside from the injury to the boilers.

The Practical Method is **Prevention** and this can be effectively done only by attacking the mineral ingredients in the water with the proper reagents, changing their nature and character and eliminating their harmful qualities.

The application of scientific knowledge is most important in the choosing of reagents. Provision must be made for the various minerals present in the water, determined by analysis, as well as for the by-products that will be formed as a result of reactions brought about. Failure to give this phase due consideration may result in more serious trouble than the first condition of the water produced.

Unscientific "dope" compounds, ineffective and often harmful, have caused steam users endless annoyance and trouble.

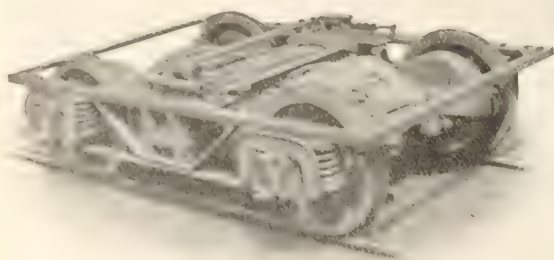
We'd like an opportunity to demonstrate results by our methods. Gallon samples of the water supplies for analysis constitute the first step. May we have them?

**Dearborn Chemical Company of Canada, Limited**

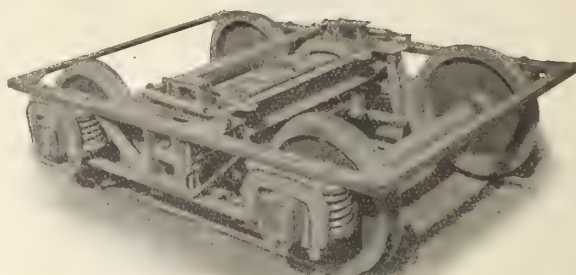
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WITH MOTORS.



WITHOUT MOTORS.

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"There are no rough spots on the road that uses the "NATIONAL" Truck.

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Passenger, Freight  
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Parts.

## CROSSEN CAR COMPANY, LTD.

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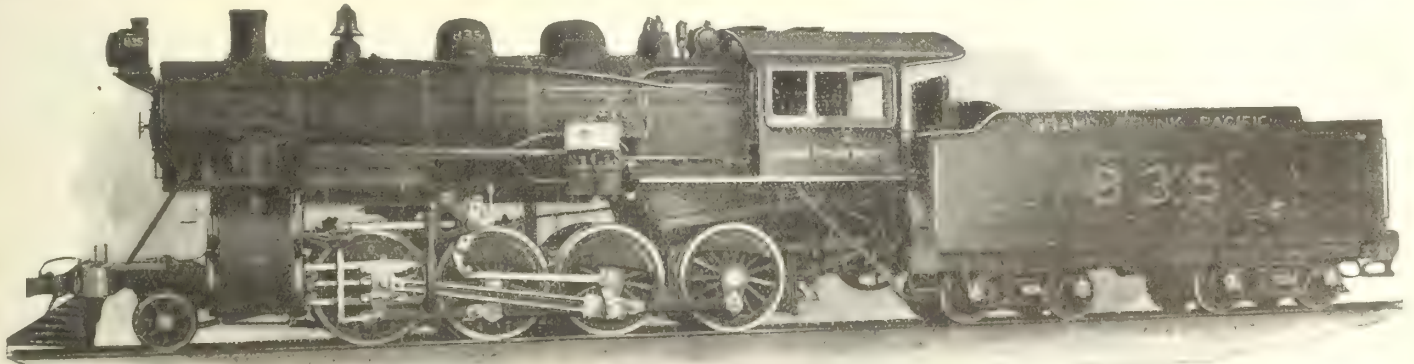
TO THE CANADIAN STREET RAILWAY COMPANIES

Wish to advise, we have opened a Canadian Plant for the manufacture of the

**KNUTSON Trolley Retriever**  
**IDEAL Catcher**  
**Pressed Steel Headlight**  
**SIMPLEX Trolley Base**

and other specialties and by February 25th, will be in a position to make shipment of our products from our Canadian Plant. Feel certain that this move will be appreciated by the Canadian Street Railway Companies and await the continuance of the valued patronage given us by the numerous lines in Canada.

**THE TROLLEY SUPPLY CO., Canton, Ohio**



Consolidated Type Locomotive Built for Freight Service on the Grand Trunk Pacific Railway.

## LOCOMOTIVES

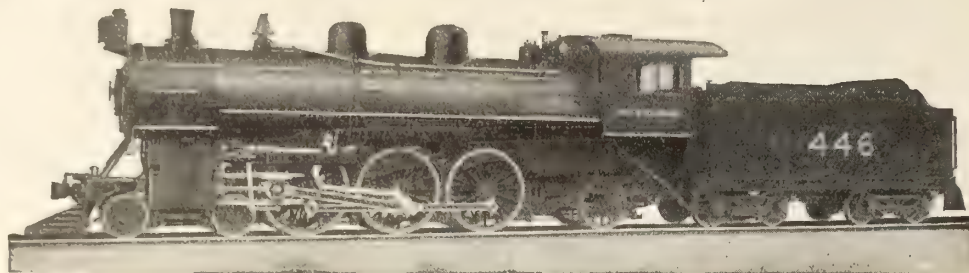
Long experience, new equipment, efficient management and expert workmen, are guarantees that our Locomotives will give record service. Over 1,200 Locomotives have been built at our Works since the erection of the plant. We are builders of Simple and Compound Locomotives adapted to every variety of service, for Railway Contractors, for Industrial Purposes, Mines, all classes of Railway Work, etc.

We are also builders of stationary boilers, suitable for contractors and industrial plants. Grey iron castings—any size or shape—ordinary or intricate—made promptly. New foundry, splendidly equipped. We would be pleased to quote on castings—singly or by contract. We also make drop forgings of all descriptions.

**CANADIAN LOCOMOTIVE CO., Limited, Kingston, Ontario**



## Heavier Trains—Less Coal and Water Per Trip



PACIFIC TYPE LOCOMOTIVE — INTERCOLONIAL RAILWAY.

Total weight of engine, 243,500 pounds; weight on drivers, 154,000 pounds; diameter of drivers, 73 inches; boiler pressure, 180 pounds; cylinders,  $23\frac{1}{2}$  x 28 inches; maximum tractive power, 32,400 pounds.

On a 185 mile run at an average speed of 40 miles per hour, these new Pacific type locomotives handle 10 cars and consume 12,884 pounds of coal and 9,750 gallons of water per trip.

Pacific type locomotives built five years ago, handled 9 cars on this same run at the same speed, but consumed 17,620 pounds of coal and 14,250 gallons of water per trip.

This is a saving of 26.9 per cent. in coal and 31.6 per cent. in water, with one extra car.

## MONTREAL LOCOMOTIVE WORKS, LIMITED,

DOMINION EXPRESS BUILDING, MONTREAL, CANADA

## Nova Scotia Steel and Coal Co., Limited

*Manufacturers of*

MARINE, RAILWAY AND GENERAL ENGINEERING FORGINGS OF ALL SHAPES AND UP TO 40 TONS IN WEIGHT, MADE FROM BEST ORDINARY OR HARMET FLUID COMPRESSED OPEN-HEARTH STEEL. OUR FORGE IS EQUIPPED WITH THE MOST MODERN STEAM HYDRAULIC PRESSES.

RAILWAY TRACK MATERIAL, fish plate, tie plate, track bolts, spikes, tee rails—12 to 40 lbs. per yard.

ROLLED STEEL FOR CAR BUILDERS' USE: Spring, machinery, tire, angle, and merchant bar steel, bright compressed shafting, rivets, tank plate—12-gauge up to 1" and 50" wide cold twisted steel bars for reinforced concrete work.

ALSO MINERS AND SHIPPERS OF THE CELEBRATED "OLD SYDNEY" COAL. HIGH CALORIFIC VALUE—LOW ASH—UNEXCELLED FOR STEAM-RAISING PURPOSES. BEST HOUSE COAL MINED IN CANADA.

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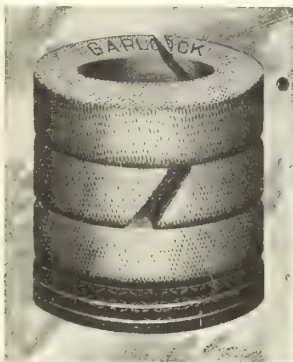
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Style No. 3200

## THE GARLOCK PACKING CO.

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BRANCHES:

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Locomotive Throttles  
Use Garlock Style Number 3200.

Air Pump Piston Rods  
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High Pressure Cold Water  
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These Packings are Guaranteed to give Satisfactory Service under the above conditions.

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Nova Scotia  
Lake Edward  
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THROUGH TICKETS AND LOW RATES

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## Engineers and Boilermakers



Steel Tug "Fredericton" built for the Dominion Government, 80 feet length, 20 feet breadth, 10 feet draught, compound marine engine, 12 x 26 x 18, Clyde boiler 10 feet x 11 feet, 145 lbs. steam.

Dredges, Hydraulic and Dipper Type; Steel Steamers, full Canal Size; Tugs, Barges and Scows

*Marine Engines and Boilers, all Sizes*

## Polson Iron Works, Limited

Works and Office, Esplanade East, Toronto

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MADE IN CANADA

### PEDLAR'S "Perfect" CULVERTS



Illustration Shows Method of Handling from Flatcar to Field. This is a 60-inch Culvert, 30 feet long, for Toronto Eastern Railway.

are made to specifications for length in sizes from 8 to 84 inches in diameter. The rivetted type has lateral narrow and deep corrugations of greater frequency than in any other culvert on the market. Heavily galvanized, anti-corrosive, frost proof. Once laid, the job is PERMANENT. Shipped assembled in lengths up to 40 feet—coupling bands supplied FREE for greater lengths.

Write for complete Culvert Reference Book No. 4 "R.M.," giving drainage tables and valuable data. Address nearest branch.

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**The PEDLAR PEOPLE, Limited**

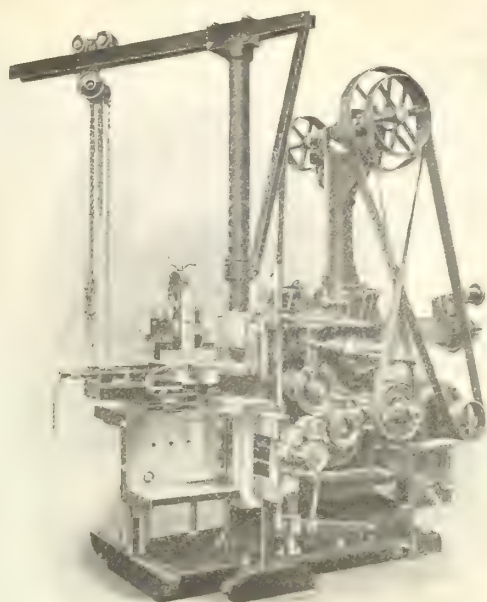
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**OSHAWA, ONT.**

Branches: Montreal, Ottawa, Toronto, London, Winnipeg.

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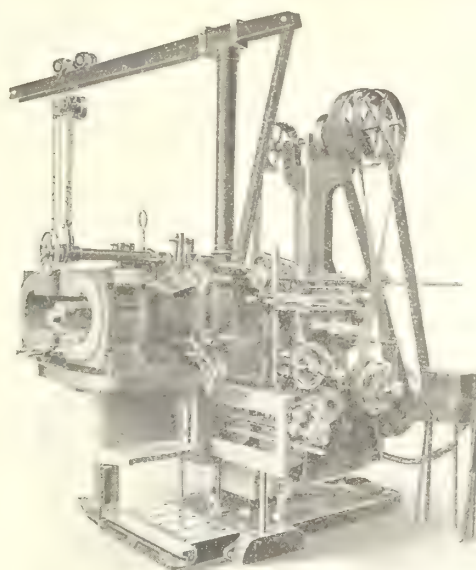




**SPECIAL DRAW CUT RAILROAD SHAPER, 32-INCH STROKE.**

THE MOST POWERFUL SHAPER OF ITS SIZE BUILT,—ENOUGH SO TO BREAK  $1\frac{1}{4}$  x 2-INCH TOOL STEEL.

RIGID IN CONSTRUCTION, AND THE DRAW CUT ELIMINATES VIBRATION AND CHATTER.



**SPECIAL RAILROAD SHAPER, SLOTTING CONTINUOUS AXLE BOXES 22 INCHES THROUGH DIAMETER OF CROWN BRASS  $12\frac{1}{2}$  INCHES.**

THIS MACHINE PLANES THE BRASS WITH THE LINES OF CUT PARALLEL TO THOSE IN THE BOX, MAKING A PERFECT BEARING, AND ELIMINATING TROUBLE WITH LOOSE BRASSES.

**THE MORTON MANUFACTURING CO., Muskegon Heights, Mich., U.S.A.**

Send for Bulletin No. 6 G., which fully illustrates.

Visit our Exhibit at Panama-Pacific International Exposition, San Francisco, Cal. Located Section 1, Block 39, Palace of Machinery.

# The Sign of the Times



Enamelled iron signs are ideal for station name and station door signs.

They are much superior to a painted wooden sign, which has to be repainted at frequent intervals, and they last a lifetime.

There is absolutely no wear to them, and we guarantee that they will not fade or be affected by the weather in any way.

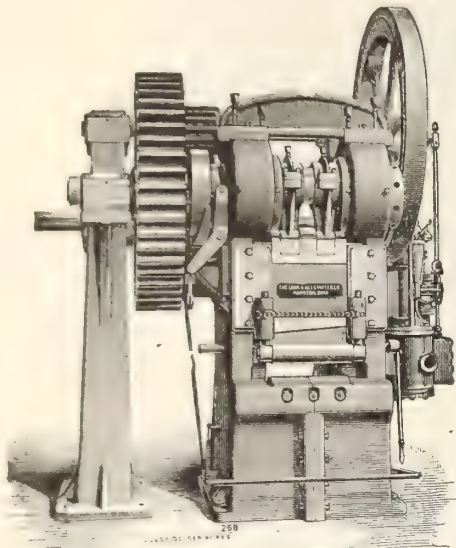
We will be pleased to quote you prices on request.

## Acton Burrows Limited

70 Bond Street, Toronto, Ont.



# POWER PUNCHING AND SHEARING MACHINERY



Gate Shear—Steam-Driven

Over 350 sizes and styles for all kinds of light and heavy work designed and manufactured by

## THE LONG & ALLSTATTER CO.

Hamilton, Ohio, U.S.A.

Riveting Machines

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Bending and Forming Machines

Write for Catalogue if interested. Correspondence invited.

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When better files are possible they will still bear these famous names

**KEARNEY & FOOT  
GREAT WESTERN  
AMERICAN  
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**MADE IN CANADA**

For 50 years we've made files only. To-day we make sixty million each year. From raw steel to finished file we supervise every step.

When any improvement is possible you'll find it first in the "Famous Five."

To cut filing cost—replace all half-worn files. At that point they lose efficiency. They require more time and more effort to remove less stock less accurately. You save money by using more files.

What you save in time, labor and money more than pays for the extra files.

## NICHOLSON FILE COMPANY

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Everywhere

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"File Philosophy"—the first and only handbook on files. Send for your free copy now.





## Pintsch Mantle Light

No other system of car lighting gives clean, safe and efficient light without intricate mechanism, subject to defects and failures. Pintsch Mantle Light is the only absolutely dependable method of lighting railway cars.

### The Safety Car Heating and Lighting Company

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718 TRANSPORTATION BUILDING, MONTREAL

## HUNT-SPILLER IRON

HAS THE  
STRENGTH AND WEARING QUALITIES

that are absolutely necessary in

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ELIMINATES ENGINE HOUSE REPAIRS

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For Roundhouses and  
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Highest Efficiency on  
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**The Positive Lock Washer**  
Is the BEST Nut LOCK for all purposes



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## ELECTRIC

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UNIVERSAL MOTOR

or motor wound for alternating or direct current.

Let us demonstrate the superiority of the

**NEW THOR Electric Drill**

by a practical test in your own shop, ten days' free trial. Select the size you want and send us your order to-day.

Our experience in the manufacture of pneumatic tools has enabled us to produce electric drills which are unique in design and construction.

When ordering, describe current available for operating.

Shipped on Trial at Our Expense.

Possess many new features which are distinctive in this type alone. The only electric drills made which are equipped throughout with ball and roller bearings. Other features are an improved switch, accessible brushes, removable pinion on armature shaft, increased power and light weight.

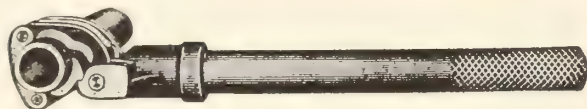
All Sizes

in Stock



**INDEPENDENT PNEUMATIC TOOL CO., 334 St. James St., Montreal, Que.**

## The Parmelee Pipe Wrench "The Toothless Wonder"



### PRICE LIST C

Length Handle	Set No.	Pipe Handled	Set Complete	Extra Handle	Extra Girths
10 in.	1	3/4, 1, 1 1/4 in.	\$5.00	\$2.25	3/4, 1, 1 1/4 in. \$ .75
20 in.	2 1/2	1, 1 1/4, 1 1/2, 2 in.	7.50	2.50	1 1/4, 1 1/2 in. 1.00
25 in.	3 1/2	1 1/4, 2, 2 1/2, 3 in.	7.50	3.00	1 1/2, 2, 2 1/2, 3 in. 1.25

Prices on larger sizes furnished upon application.

## Rice Lewis & Sons, Ltd.

TORONTO, CANADA.

DESIGNED ESPECIALLY to handle pipes spaced closely as in coil work. No. 2 1/2 wrench illustrated requires but three-quarter inch space between pipes.

**POSITIVE GRIP** instantly taken. Operates without lost motion in stroke of handle. Can be locked or released easily in any position on the pipe.

**RATCHET-LIKE ACTION.** Successive grips can be taken without having to hold the wrench on the pipe. By a slight twist of the handle, which is round and knurled, the wrench is locked in any position.

**CAN'T CHEW.** The Parmelee will make or break the tightest joints without injuring pipe or threads, as it has no teeth. The only wrench suitable for galvanized pipe.

**CAN'T CRUSH.** The Parmelee will grip, without crushing pipe that has become weakened by long use or exposure and separate hopelessly rusted joints, saving its cost many times over.

## Algoma Steel Corporation, Limited

Manufacturers of

**Steel Rails, Splice Bars, Tie Plates, Forging Billets, etc.**

We would be pleased to have your enquiries for 1915 deliveries.

**Works and Sales Department: Sault Ste. Marie, Ontario, Canada**





Triple Elliptic Tender Spring, Cast Ends

# RAILWAY SPRINGS

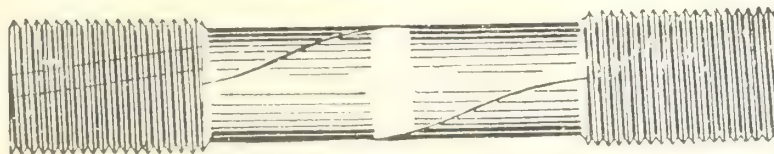
LOCOMOTIVE, TENDER AND PASSENGER CAR SPRINGS of every description.  
EQUALIZING, DRAWBAR, BUFFER AND SPIRAL SPRINGS of all kinds.  
STREET RAILWAY SPRINGS, from the largest to the smallest.  
TRACK TOOLS, RAIL BRACES, TIE PLATES, GUY ANCHORS AND RODS, LOCOMOTIVE SANDERS  
CHAIN, Etc.

MANUFACTURED BY

**B. J. COGHLIN COMPANY, LIMITED**  
MONTREAL - - CANADA

## American Flexible Staybolts

Manufactured in Montreal



Made of the best standard staybolt iron, adding flexibility by process  
of making as shown above--closely approximating a rope structure.

*Write for booklet on subject*

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MANUFACTURERS OF

### BASIC OPEN HEARTH STEEL RAILS

We will be pleased to have your enquiries for 1915 shipments

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## DUNTLEY ELECTRIC TOOLS

DRILLS—All Sizes

GRINDERS—All Sizes

Supplied with universal windings, suitable for D.C. and A.C. single phase current. Armatures—series wound. Efficiency—Durability—Quality. These are the strong points of Duntley tools.

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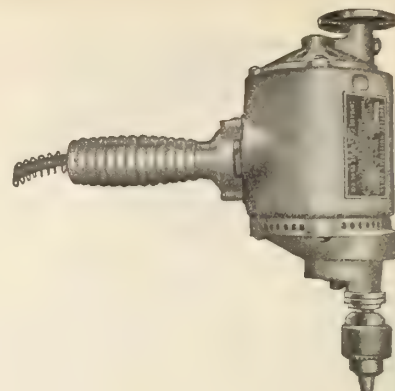
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TAPS — DIES — REAMERS — DRILLS

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IN  
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SOLD  
ON  
MERIT

**Pratt & Whitney Co. of Canada, Ltd.**  
DUNDAS, ONTARIO

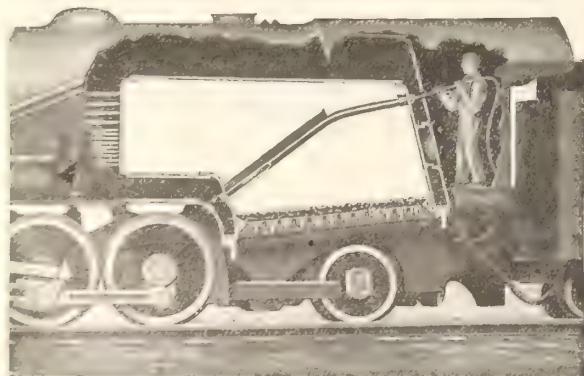
MONTREAL

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Lagonda Arch Tube Cleaner.



Lagonda Cleaner Removing Scale from Arch Tubes.

## LAGONDA ARCH TUBE CLEANERS

Scale forms in the Water Arch Tubes of Locomotives, and it must be removed, as Government Inspection requires that these tubes be absolutely clean.

The Lagonda Arch Tube Cleaner will remove these scale deposits easily and quickly. They are built for all sizes of tubes and can be driven by either water, air or steam. Send for Catalogue W-1 describing the construction and operation of these Cleaners.

Other Lagonda Boiler Room Specialties are described in our General Catalogue L-8. Send for Copy.

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## IRON, STEEL AND METAL MERCHANTS

STEEL PLATES—Firebox, Flange and Tank Qualities.

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MACHINERY STEEL & STEEL SHAFTING—

STEEL BILLETS & FORGINGS—of all descriptions.

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is useful only when it connects two rails electrically. If its terminals are corroded or loose in their holes it cannot do this.

### Electric Weld Rail Bonds

are one piece with the rails and their terminals neither get loose nor corrode.

*Write for Catalogue and Notes.*

**The Electric Railway Improvement Co.**  
CLEVELAND, OHIO

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BUFFALO BEAMS ARE BEST BEAMS

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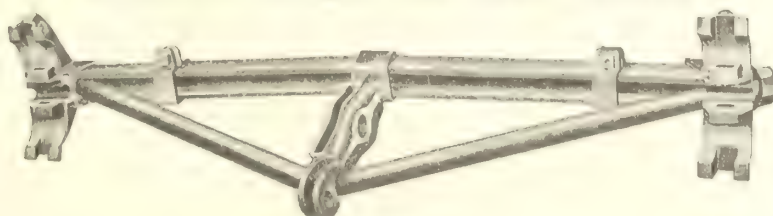
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# Canadian Railway and Marine World

June, 1915.

## Coaling Plants on the Canadian Northern Railway.

A 100-ton mechanical coaling plant, as illustrated herewith, has been built recently for the C.N.R. at Trenton, Ont., the central divisional point on the Toronto-Ottawa line, which was opened early last summer. It is the intention to erect similar plants this year at the several divisional and turning points on the section of the new transcontinental line north of Lake Superior, viz., Capreol, Foley, Fitzbach and Hector. All these plants will be identical in structural details and method of operation, the only difference that will be necessary will possibly be in the mechanical power, depending on what is available. Wherever possible, as in Trenton, electric drive will be used, but alternative steam and gasoline engine drive have been developed, to be used as conditions warrant. These plants

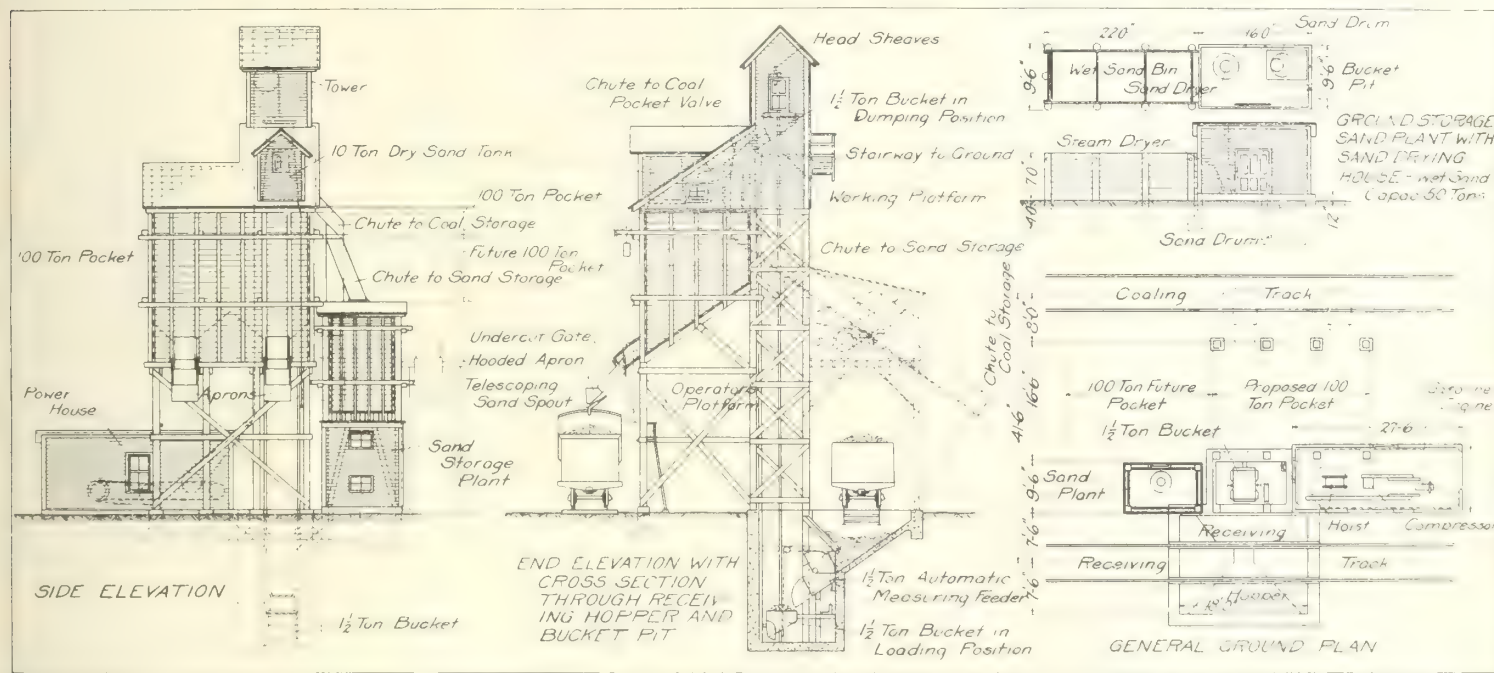
tween, these columns, is composed of heavy planking.

To the rear of the coal pocket, at one end, there is an elevator shaft, consisting of four wooden columns, two of which are those of the coal pocket supports, the other two being carried on the concrete side walls of the receiving coal hopper. The elevator shaft extends into a pit, 18 ft. deep.

Back of this elevator shaft pit, and forming a part thereof, is a receiving hopper, underneath the delivery track, which spans the pit on two tracks, supported by I beams. The receiving hopper and elevator pit, consists of a concrete lined chamber, the receiving hopper having sloping sides towards the elevator shaft, the slope corresponding to that of the bottom of the coal pocket above. The coal for the plant will

top of the elevator travel, the apron roller guide bends forward, so that in the final position, the apron has swung open, the sloping bottom of the car discharging the coal through the apron to a chute, which delivers the coal into the coal pocket. As the bucket commences to descend, the apron is closed. On approaching the bottom of the pit, the feeding mechanism is automatically operated, so that the feeder revolves, dumping the contained  $1\frac{1}{2}$  ton into the bucket.

The sand storage plant is a small frame building adjoining the hoistway, the base of which is at an elevation of about 14 ft. It is of similar construction to the coal pocket, only lighter. A chute, leading into it from the top, is fed in exactly the same manner as the coal pocket, a valve in the coal



100 Ton Mechanical Coaling Plant, Canadian Northern Ry., Trenton, Ontario.

are to be of the same type as those installed on the National Transcontinental Ry., which were fully described in Canadian Railway and Marine World, Aug. 1914. While of the same type, they will only have half the capacity, with provision in the design for doubling the initial capacity when necessary, so that the ultimate capacity of the N.T.R. and C.N.R. plants will be the same. Another important difference between the plants is that the N.T.R. plants are of reinforced concrete throughout, while the C.N.R. are of wooden construction. Other minor points of difference will be apparent by referring to the description of the N.T.R. The coal is carried in an elevated coal pocket, 14 by 22 ft., and will have a depth varying from about 10 to 20 ft., the bottom of the coal pocket having a slope with regard to the horizontal of about 30 degrees. This pocket is carried on 8 heavy squared timbers, resting on concrete piers, the pedestals being heavily cross braced. The coal pocket, supported by, and contained be-

lie delivered on cars, which will be run over the top of the receiving hopper and dumped. The area of the receiving hopper is 11 by 14 ft., and as it slopes in three directions towards the front, the coal will all tend in that direction to a central point in the front edge of the bottom of the hopper. At this central point, there is a feeding mechanism, which consists of a gate, chute and feeder, the latter delivering the coal automatically in  $1\frac{1}{2}$  ton lots.

The elevating bucket is of the same capacity as the automatic feeder,  $1\frac{1}{2}$  ton, and is 4 ft. square, the bottom sloping the same as the receiving hopper and coal pocket. Hinged to this low edge of the elevator, along the front face, there is an apron or folding chute, kept closed in its upward travel by a roller on its front face bearing against a guide. The elevator ways are 30 lb. rails. The movement of the bucket from the bottom of the pit, automatically causes the feeder to revolve, filling up with the measured  $1\frac{1}{2}$  ton. At the

pocket chute diverting the sand as elevated from the receiving hopper into the sand pocket chute. Beneath the sand pocket there is a sand drying room, fed by gravity from the supply above. The dried sand is delivered by compressed air to a 10 ton dry sand tank, situated directly over top of the coal pocket. There is also a 50 ton ground storage plant for wet sand.

The coaling plant at Trenton, Ont., will be electrically operated, with the power located in a small building adjoining the hoistway, on the ground, and will be automatically operated, so that the operator will be free during the unloading period to attend to other work around the plant. With the plants that will be either steam or gasoline engine driven, the same automatic operation will be provided.

Considerable storage areas are being provided at all the division points along the C.N.R., those on the transcontinental line having capacities of from 9,500 to 14,000 tons. In order to use this plant for unloading to



these storage areas, there will be a special chute from the main chute which will lead from the top of the hoist, running back over the unloading track, through which the coal can be chuted to the storage pile in rear of the plant.

Special features of the Trenton installation are the facilities for handling the coal to and from the storage yard to the rear. At this point, the storage yard will have a capacity of 5,000 tons. Around the edge of this area, there will be a series of posts, to which a cable from the coaling plant may be attached. This cable will act as a drag line, to which will be attached a scoop with a capacity of about three-quarters of a ton, to be operated from the mechanism on the platform over top of the receiving hopper, where the operator who will manipulate the drag line will be situated. The coal, after being chuted out the back of the plant, will be picked up by the scoop, and dragged to whatever part of the pile it is desired, by attaching the cable to the most convenient post. When it is necessary to use the coal from the storage pile, the operation will be reversed, the coal being

As mentioned, the plant is designed so as to be capable of extension to double its initial capacity by the addition of a further bin of similar size to the original one, on

the elevator side of the plant. We are indebted to L. C. Fritch, Assistant to the President, C.N.R., for the information on which this article is based.

## Birthdays of Transportation Men in June.

Many happy returns of the day to:

Jas. Anderson, Manager, Sandwich, Windsor and Amherstburg Ry., Windsor, Ont., born at Ayr, Ont., June 20, 1851.

W. C. Bowles, General Freight Agent, Western Lines, C. P. R., Winnipeg, born at Montreal, June 3, 1875.

J. H. Boyle, Superintendent, District 3, Lake Superior Division, C. P. R., Schreiber, Ont., born at Waterloo, Que., June 26, 1869.

F. P. Brady, General Superintendent, National Transcontinental Ry., Quebec to Winnipeg, and Lake Superior Branch, G. T. Pacific Ry., Cochrane, Ont., born at Haverhill, N. H., June 22, 1853.

A. H. N. Bruce, M. Can. Soc. C.E., Ottawa, born at Ballyscullion, Ireland, June 18, 1854.

H. W. Brodie, General Passenger Agent,

A. Craig, City Passenger Agent, C. P. R., Hamilton, Ont., born there, June 5, 1884.

A. E. Doucet, M. Can. Soc. C.E., ex-District Engineer, National Transcontinental Ry., Quebec, born at Montreal, June 9, 1860.

E. W. DuVal, Superintendent, District 3, Saskatchewan Division, C. P. R., Saskatoon, born at Toledo, Ohio, June 5, 1885.

Knowlson Elliott, City Freight Agent, C. P. R., Calgary, Alta., born at Gorrie, Ont., June 26, 1884.

J. M. R. Fairbairn, M. Can. Soc. C. E., Assistant Chief Engineer, Eastern Lines, C. P. R., Montreal, born at Peterboro, Ont., June 30, 1873.

W. E. Foster, Solicitor for Ontario, G. T. R., Montreal, born at Belleville, Ont., June 27, 1866.

A. A. Goodchild, General Storekeeper, Eastern Lines, C. P. R., Montreal, born at Peckham, London, Eng., June 3, 1866.

H. W. Harding, Local Secretary, Canadian Northern Ry., London, Eng., born there June 6, 1869.

Hon. J. D. Hazen, M.P., Minister of Marine, Ottawa, born at Oromocto, N. B., June 6, 1860.

L. K. Jones, I. S. O., Assistant Deputy Minister Department of Railways and Canals, Ottawa, born at Port Hope, Ont., June 9, 1849.

A. C. Lytle, Assistant Superintendent of Construction, Montreal Tramways Co., Montreal, born at Hemmingford, Que., June 6, 1854.

R. S. McCormick, M. Am. Soc. C.E., Chief Engineer, Algoma Central and Hudson Bay Ry. and Algoma Eastern Ry., Sault Ste. Marie, Ont., born at Quaker City, Ohio, June 22, 1873.

Duncan McDonald, ex-General Manager, Montreal Tramways Co., born at St. Thomas de Montmagny, Que., June 17, 1859.

S. J. McLean, Dominion Railway Commissioner, Ottawa, born at Quebec, June 14, 1871.

J. V. McNab, Resident Engineer, C. P. R., Moose Jaw, Sask., born at Ayr, Ont., June 11, 1884.

C. E. McPherson, Assistant Passenger Traffic Manager, Western Lines, C. P. R., Winnipeg, born at Chatham, Ont., June 7, 1861.

W. R. MacInnes, Freight Traffic Manager, C. P. R., Montreal, born at Hamilton, Ont., June 7, 1867.

H. J. Maguire, District Baggage Agent, British Columbia Division and B. C. and Pacific Coast Service, C. P. R., Vancouver, B. C., born at Toronto, June 16, 1881.

G. Manson, Assistant to the Vice President C. P. R., Montreal, born at Thurso, Scotland, June 8, 1863.

H. N. Merriam, ex-Division Engineer, Pacific Great Eastern Ry., Vancouver, B. C., born at Waupun, Wis., June 19, 1874.

J. D. Morton, Assistant Comptroller, Canadian Northern Ry., Toronto, born at London, Ont., June 15, 1857.

L. Mulkern, District Freight Agent, C. P. R., Toronto, born at London, Ont., June 18, 1871.

J. E. Pinault, General Superintendent, Canada and Gulf Terminal Ry., Mont Joli, Que., born at Rimouski, Que., June 24, 1884.

F. R. Porter, Assistant General Freight Agent, Grand Trunk Pacific Ry., Winnipeg, born at Stratford, Ont., June 13, 1875.



100 Ton Coaling Plant for Canadian Northern Railway Divisional Points.

dragged over to the coaling plant, being run into the receiving hopper, and then elevated into the pocket in the manner before described. This installation is in the nature of an experiment, and if successful, will possibly be applied to the other plants.

Lines West of Revelstoke, C. P. R., Vancouver, B. C., born at Fredericton, N. B., June 8, 1874.

G. W. Coburn, Resident Engineer, C. P. R., Brandon, Man., born at Upper Melbourne, Que., June 24, 1877.



F. Price, Superintendent of Car Service, G. T. R., Montreal, born there, June 11, 1864.  
 Allan Purvis, Superintendent District 2, Ontario Division C. P. R., London, Ont., born at Batavia, Java, June 29, 1878.  
 L. G. Rogers, Assistant Superintendent, Division 1, Ontario Division, C. P. R., Trenton, Ont., born at Richford, Vt., June 18, 1874.  
 N. Van Wyck, Freight Claims Agent, Can-

ada Steamship Lines Ltd., Montreal, born at Hamilton, Ont., June 29, 1883.

V. G. R. Vickers, Manager, Foreign Department, and Superintendent, Atlantic Division, Dominion Express Co., Montreal, born at Toronto, June 1, 1866.

Walter White, Trainmaster, G. T. R., Palmerston, Ont., born at Toronto, June 4, 1866.

## Reconstruction of Canadian Pacific Railway Bridge Over Lachine Canal.

The accompanying illustrations show the reconstructed C.P.R. bridge over the Lachine canal near Montreal. It is unique in many respects, and the swing span is moved with ease, although a weight of 758 tons swings upon the central pivot. From the time that the railway traffic is closed till the moment when the waterway is open for steamship traffic is only 70 seconds. The danger signals on the approaches are automatically adjusted before any movement can be made.

The object in reconstructing the bridge was to complete the second track between Montreal and Brigham Junction, 49.5 miles from Montreal on the Montreal-St. John, N.B., line, this being the only single track structure left between the two points, and occasioning slight delays owing to the converging tracks at both approaches to the bridges. P. B. Motley, Engineer of Bridges, C.P.R., found it possible to design a double track swing-bridge in such a manner as to utilize the old pivot pier without decreasing the waterway for traffic on the canal, using a type of bridge consisting of four deck plate girders instead of the original lattice truss construction.

This plate girder swing span is said to be the longest plate girder span of its kind ever built, being 239 ft. 7 ins. long and 13 ft. 6½ ins. deep in the centre, reduced to 8 ft. ½ in. at the ends measured from back to back of flange angles. The 4 girders were each shipped in three pieces from the Dominion Bridge Co.'s shops, which are near the bridge site, and were lowered into place by heavy derricks. When all the parts were assembled, they were rivetted up into their completed lengths, after which the operating machinery was installed. The use of 4 girders was dictated by the necessity of maintaining traffic while the

There is also a 90 ft. span at the south end of the bridge to accommodate the existing roadway and admit of the running of a railway track along the south canal bank in the future. This span weighs about 143 tons, making a total of 758 tons for the whole bridge. The total cost was \$233,000.

The electric operating power is carried by submarine cables under the canal to the centre pier, and there supplied to duplex 30 h.p. motors, which are controlled from the operator's house on the north bank of

tions, and considering the nature of the work and the tonnage erected, the speed of the work is certainly remarkable.

The bridge is protected by the most modern interlocking machinery, so as to make it impossible for a train to approach the bridge before it is properly closed and safely locked, and, in addition, it is impossible for the operator to open the bridge for canal traffic until all railway traffic is stopped at a safe distance from the bridge—all of these operations being carried out from the signal tower, which commands a view up and down the canal even when trains are passing over the bridge. The structure is also provided with a system of lights for the protection of shipping on the canal, and gives a much clearer view along the track than formerly, as there is no overhead lattice work projecting above the rail level.

### Order re Hand Rails and Steps for Reaching Locomotive Headlights.

The Board of Railway Commissioners passed general order 140, April 13, as fol-



C.P.R. Bridge Over Lachine Canal with Swing Span Open.

the canal, and, in addition, a spare 30 h.p. motor is kept on hand in the house in case of emergency. The house is entirely of fireproof construction.

Not only is the design of the structure interesting, but the rapidity of construction is also noteworthy. Work was started on the substructure on Dec. 1, 1914, which involved the demolition of the old south single-track abutment, and the building of a new double track abutment behind it, likewise the removing of a certain amount of earth embankment and the widening of the old one to accommodate the new double track. It also included the extension of the

lows:—Re complaint of W. L. Best on behalf of Brotherhood of Locomotive Firemen and Enginemen against the failure of railway companies properly to equip their locomotives with safe and adequate facilities for reaching headlamp when necessary for employees to light and give other necessary attention to this part of the locomotive; and re general order 102, Feb. 17, 1913, prescribing rules and regulations respecting safety appliances on trains. Upon hearing what was alleged by the representatives of the Wabash, Canadian Pacific, Quebec, Montreal & Southern, Canadian Northern Ontario, Canadian Northern Quebec, Canadian Northern, Ottawa & New York, Grand Trunk, Grand Trunk Pacific, Central Vermont, Michigan Central, New York Central & Hudson River, and Rutland Railways, the Brotherhood of Locomotive Engineers, the Brotherhood of Locomotive Firemen and Enginemen, at a conference had with the Board's operating officers, at Ottawa, April 8, the railway companies unanimously consenting to the proposed amendment: It is ordered that general order 102 be amended by adding to the clause with the heading, "Handrails and Steps for Headlights," in the second last paragraph of the regulations, the words, "and headlight equipment," so as to make the said clause read as follows:

"Handrails and Steps for Headlights: Locomotives having headlights which can not be safely and conveniently reached from pilot beam or steam-chests shall be equipped with secure handrails and steps suitable for the use of men in getting to and from such headlights and headlight equipment."

To curve rails for curves down to 3 degrees is the tendency on the better maintained roads, the object being to obtain a better riding track and one that may be maintained to line more easily.



C.P.R. Bridge Over Lachine Canal, with Swing Span Closed.

demolition of the old structure and building of the new was being carried on. By this plan it was possible to erect two girders on the upstream side of the old bridge, after which traffic was diverted into them, while the downstream side was altered and the other two girders erected, after which the four girders were connected by their lateral and other bracing. This operation saved the building of a special temporary wooden bridge alongside the old structure, as would otherwise have been necessary.

The weight of each of these girders is 112 tons and of the whole swing span 615 tons.

two piers on the upstream side towards the Lachine locks, one of which (the pivot pier), required considerable subaqueous work and bonding into the old stonework. The north abutment was extended in the same direction to accommodate the double track, and also to act as the lower storey for the operator's house. This substructure work was carried out during the winter, working 24-hour shifts most of the time, until the bridge seats were ready to receive the steel girders on Feb. 8.

During the progress of the work, no trains were delayed by any of the opera-



## Steam Railway Statistics for Year Ended June 30, 1914.

The table given in our last issue showed the financial results of the operations of steam railways for the year ended June 30, 1913. The following table gives the percentages and the principal statistical information compiled by the companies. The table published last issue and the one given below contain all the information given prior to 1910 in our compilation of these statistics, but the columns have been rearranged so as to combine in the first table the financial and in the second the statistical information:—

Name of Railway	Proportion of total Passenger service to train revenue to total earnings	Proportion of freight revenue plus switching revenue, &c., to total earnings	Revenue Train Mileage	Mileage of Non Revenue Trains	Earnings per Train Mile	Passengers Carried	Passengers Carried One Mile	Passenger Earnings per Train Mile	Tons of Freight Carried	Tons of Freight Carried One Mile	Freight Earnings per Train Mile
Algoma Central & Hudson Bay.....	8.26	83.12	291,159	51,091	\$3.28	40,850	2,701,523	\$0.50	369,088	25,368,799	\$6.11
Algoma Eastern.....	11.77	87.30	50,854	3,080	3.60	39,006	695,654	1.19	731,928	8,192,188	4.32
Atlantic, Quebec & Western.....	56.83	42.93	91,816	5,589	.72	40,730	1,431,898	.56	34,125	1,430,308	.87
Bay of Quinte.....	22.99	75.77	213,836	.....	.94	103,927	1,595,318	.29	244,820	9,488,941	.73
Bedlington and Nelson.....	19.00	81.60	1,708	51	.49	612	4,188	.09	1,348	12,639	.39
Brandon, Sask. & Hudson Bay.....	56.23	43.70	66,792	2,818	.90	31,365	1,114,623	.78	62,371	2,773,708	1.13
British Yukon.....	34.47	64.00	45,957	720	4.56	9,864	878,153	1.81	43,507	3,806,933	2.95
Brockville, Westport & N. W.....	53.39	46.51	54,656	.....	1.29	62,782	1,721,871	.71	27,327	888,471	.99
Canada and Gulf Terminal.....	47.89	50.69	23,624	1,204	1.95	28,033	595,224	.94	26,347	804,628	.99
Canada Southern.....	33.10	66.34	3,880,762	58,701	2.73	1,483,993	127,153,523	1.71	7,540,865	1,117,844,297	3.58
Canadian Northern.....	18.21	76.99	8,920,016	300,059	2.66	2,010,272	158,216,177	1.22	6,537,416	2,419,604,849	2.95
Canadian Northern Ontario.....	27.58	68.99	945,619	86,445	1.54	410,806	17,448,111	.69	1,164,128	101,375,945	1.92
Canadian Northern Quebec.....	26.21	71.81	837,793	38,871	1.99	641,797	21,795,953	.93	1,116,012	87,811,675	2.48
Canadian Pacific.....	30.95	68.02	47,645,434	1,948,384	2.51	15,449,849	1,570,758,210	1.58	27,801,217	10,601,426,321	3.08
Cape Breton.....	57.68	38.25	19,654	.....	.58	9,415	207,142	.33	6,379	95,272	.22
Caraguet.....	31.15	68.85	41,600	.....	1.79	18,468	791,422	.55	32,901	1,316,040	1.23
Central Ontario.....	32.24	61.19	365,730	5,228	.95	169,858	3,829,127	.61	354,427	13,450,167	1.01
Crow's Nest Southern.....	13.73	86.01	90,273	9,322	1.50	17,595	453,350	.40	265,472	14,402,912	2.62
Cumberland Ry. & Coal Co.....	17.87	81.70	47,947	.....	2.24	48,668	615,027	.61	354,346	4,255,944	1.84
Dominion Atlantic.....	47.98	50.82	594,515	71,148	1.64	461,962	19,395,157	.95	356,829	18,677,339	1.69
Eastern British Columbia.....	6.97	92.46	7,752	168	6.23	5,660	54,657	.43	121,700	1,081,028	5.76
Elgin and Havelock.....	31.46	68.54	11,664	.....	.89	6,896	66,460	.28	12,384	119,762	.61
Esquimalt & Nanaimo.....	39.76	57.42	271,140	24,746	3.10	461,616	11,181,085	2.26	435,085	15,773,080	3.84
Essex Terminal.....	.....	89.24	23,200	.....	2.25	.....	.....	.....	176,393	881,965	.....
Fredericton & Grand Lake Coal & Ry. Co.	8.81	90.30	24,632	.....	2.02	7,616	181,311	.18	63,176	1,807,602	1.83
Grand Trunk.....	34.94	63.69	19,140,816	744,132	2.04	12,216,728	647,018,545	1.55	20,027,455	3,561,953,486	2.27
G. T. R. (Canada Atlantic).....	23.67	73.73	1,779,969	102,496	1.33	608,847	21,226,334	.71	1,917,573	276,033,020	1.54
Grand Trunk Pacific.....	20.59	77.81	3,949,334	709,680	2.08	691,686	58,606,074	1.07	1,792,445	991,781,455	2.51
Halifax and South Western.....	48.51	50.79	396,656	11,110	1.41	245,090	8,090,318	.76	267,342	16,386,129	.92
Hereford.....	17.52	82.02	96,391	690	1.27	32,352	709,723	.32	268,203	9,620,349	1.60
Intercolonial.....	33.33	65.98	8,104,197	139,303	1.53	3,927,559	200,154,568	1.21	5,082,484	1,345,580,752	1.61
International of New Brunswick.....	37.92	61.10	120,530	5,558	.....	38,383	1,722,766	.....	88,872	3,444,821	.....
Inverness Ry. and Coal Co.....	10.91	88.46	106,026	3,290	2.00	38,186	823,086	.54	288,470	15,898,665	1.76
Irondale, Bancroft & Ottawa.....	29.61	68.39	33,850	.....	.95	18,067	293,441	.28	31,078	795,281	.65
Kent Northern.....	42.98	57.02	16,902	.....	1.19	10,000	1,722,766	.51	7,250	145,060	.68
Kettle Valley.....	11.06	88.94	2,216	.....	3.29	1,308	23,686	.36	27,772	136,294	2.92
Klondike Mines.....	.....	100.00	14,168	.....	7.91	.....	.....	.....	42,786	444,490	7.91
London & Port Stanley.....	30.09	68.73	122,382	607	1.10	132,669	2,111,340	.51	637,869	10,332,663	1.61
Lotbiniere & Megantic.....	24.16	77.57	18,960	.....	1.59	15,249	200,524	.38	41,941	583,681	1.22
Maine Central (Princeton Branch).....	62.63	37.37	13,596	206	1.32	82,649	421,510	1.08	183,443	935,559	.69
Manitoba Great Northern.....	15.74	82.90	38,799	475	1.13	9,742	223,671	.21	85,005	4,614,721	1.24
Maritime Coal, Ry. & Power Co.....	10.41	89.59	33,878	2,000	2.10	20,472	209,611	.21	214,631	2,339,300	1.88
Massawippi Valley.....	33.39	65.96	181,263	1,516	1.17	161,691	2,813,444	.66	527,491	15,988,830	1.67
Midland Ry. of Manitoba.....	57.72	39.08	248,842	415	1.31	123,094	7,887,843	1.25	185,111	13,267,271	1.25
Moncton and Buctouche.....	35.51	60.88	20,487	.....	1.45	21,047	463,597	.51	22,216	446,847	.88
Montreal and Atlantic.....	23.90	73.78	582,163	57,572	1.74	361,007	8,756,525	.80	1,203,616	62,175,234	1.84
Montreal and Province Line.....	43.85	54.43	91,820	819	1.49	143,884	2,392,084	.88	108,478	2,766,054	1.87
Montreal and Vermont Jct.....	47.14	52.73	92,778	2,217	1.42	117,613	2,483,920	1.07	434,484	10,985,854	2.01
Morrissey, Fernie & Michel.....	9.01	90.99	39,601	.....	3.79	176,700	1,077,870	.34	833,236	5,082,739	3.45
Napierville Jct.....	8.24	91.61	39,292	18	2.67	18,932	273,120	.43	402,186	11,960,303	3.25
National Transcontinental.....	16.92	82.31	9,846	5,551	.79	10,827	540,889	.17	62,973	5,045,541	.66
Nelson & Fort Sheppard.....	40.75	55.11	56,346	5,668	1.17	22,940	674,458	.71	26,339	1,076,425	1.94
New Brunswick & P. E. I.....	28.43	71.12	21,055	.....	.73	20,250	582,962	.43	55,343	825,020	.56
New Brunswick Coal & Ry. Co.....	26.80	64.93	42,943	.....	1.29	21,322	494,300	.34	58,507	1,926,941	.83
New Westminster Southern.....	22.17	71.40	21,055	.....	2.24	16,129	184,267	.50	51,292	534,800	1.60
North Shore.....	24.84	75.16	3,360	.....	.24	786	6,288	.06	1,550	12,400	.18
New Brunswick & Seaboard.....	13.90	86.10	12,396	.....	1.73	6,977	118,609	.24	71,243	1,211,131	1.53
Ottawa and New York.....	36.14	61.21	155,623	23,265	1.67	147,202	3,797,953	1.21	396,895	19,164,501	2.03
Pere Marquette.....	8.38	91.10	1,046,670	5,769	2.25	342,475	7,069,250	.72	2,140,323	377,499,887	2.72
Prince Edward Island.....	52.15	44.42	337,465	15,576	1.09	443,129	10,466,877	.59	116,426	4,442,919	.84
Quebec & Lake St. John.....	33.82	64.46	576,484	12,400	1.62	464,956	14,128,237	1.15	543,025	46,073,016	1.65
Quebec Central.....	29.15	69.69	851,039	271,097	1.84	434,317	18,785,938	.91	1,086,205	81,586,720	1.75
Quebec, Montreal & Southern.....	39.14	59.46	278,075	4,379	1.48	249,423	5,457,037	.76	485,390	18,739,680	1.60
Quebec Oriental.....	42.79	57.16	134,778	3,235	1.00	31,425	2,086,544	.92	66,037	5,150,275	1.06
Quebec Ry., Light & Power Co.....	15.35	83.44	31,281	62	2.78	115,629	1,387,548	1.82	225,045	1,716,315	2.03
Red Mountain.....	20.83	77.51	9,779	551	1.66	7,321	65,685	.48	31,085	277,268	1.20
Rutland and Noyan.....	15.25	82.03	137,560	.....	1.18	9,512	152,192	.18	55,032	915,530	.97
Salisbury and Albert.....	62.46	37.54	7,933	.....	1.87	129,936	440,483	1.71	222,856	755,482	2.24
Schomberg and Aurora.....	34.21	63.70	30,064	.....	1.20	15,924	339,767	.41	40,106	1,034,854	.76
.....	43.59	56.41	22,962	.....	.60	16,695	189,072	.26	15,352	153,520	.34

(Continued on page 205)



## Steam Railway Statistics for Year Ended June 30, 1914 (Continued from page 204)

Name of Railway	Proportion of total passenger service to train revenue	Proportion of freight revenue plus switching revenue &c. to total earnings	Revenue Train Mileage	Mileage of Non-Revenue Trains	Earnings per Train Mile	Passengers Carried	Passengers Carried One Mile	Tons of Freight Carried	Tons of Freight Carried One Mile	Freight Earnings per Train Mile
Stanstead, Shefford & Chambly.....	45.88	53.47	83,473	9,207	1.07	175,370	1,216,319	461,549	2,279,469	1.23
St. Clair Tunnel.....	20.93	78.68								
St. Lawrence & Adirondack .....	43.00	56.59	326,967	11,685	1.99	708,579	15,729,202	946,044	35,565,339	3.23
St. Martins.....	39.66	59.28	17,160		.84	9,056	178,636	11,277	168,273	.50
Sydney and Louisburg.....	6.87	89.82	256,355		3.14	176,166	2,182,099	4,895,569	70,317,192	3.22
Temiscouata.....	24.23	73.93	169,976	13,146	1.59	76,873	2,183,516	213,681	9,353,790	2.03
Timiskaming and Northern Ont.....	37.78	57.71	779,432	61,743	2.19	517,868	23,343,245	559,952	84,486,528	2.27
Thousand Islands.....	33.05	57.99	32,060		1.26	44,706	268,230	38,789	232,734	.73
Toronto, Hamilton & Buffalo .....	26.66	69.24	478,905	18,024	3.13	669,744	20,120,113	2,194,285	84,803,590	7.00
Vancouver, Victoria & Eastern.....	32.85	64.30	320,701	30,846	2.40	263,758	7,190,252	1,315,391	35,810,120	2.84
Victoria and Sidney.....	54.04	44.23	42,100		1.34	86,179	984,282	28,637	385,139	2.51
Victoria Terminal Ry. & Ferry Co.....	50.18	38.80	2,590		1.88	82,148	81,327	26,911	26,642	2.86
Wabash (in Canada).....	27.32	72.47	1,540,110	29,935	1.64	592,798	37,222,914	1,802,486	351,899,342	2.22
Wellington Colliery Co.....	4.14	95.86	31,200		3.35	6,965	74,873	312,162	3,302,555	3.21
York and Carleton.....	36.72	62.28	8,585		.66	7,290	75,000	10,204	102,040	.41
	29.85	68.19	107,895,272	4,911,928		46,702,280	3,089,031,194	101,393,989	22,063,294,685	

## The Bridging of the St. John River between St. Leonard, N.B., and Van Buren, Me.

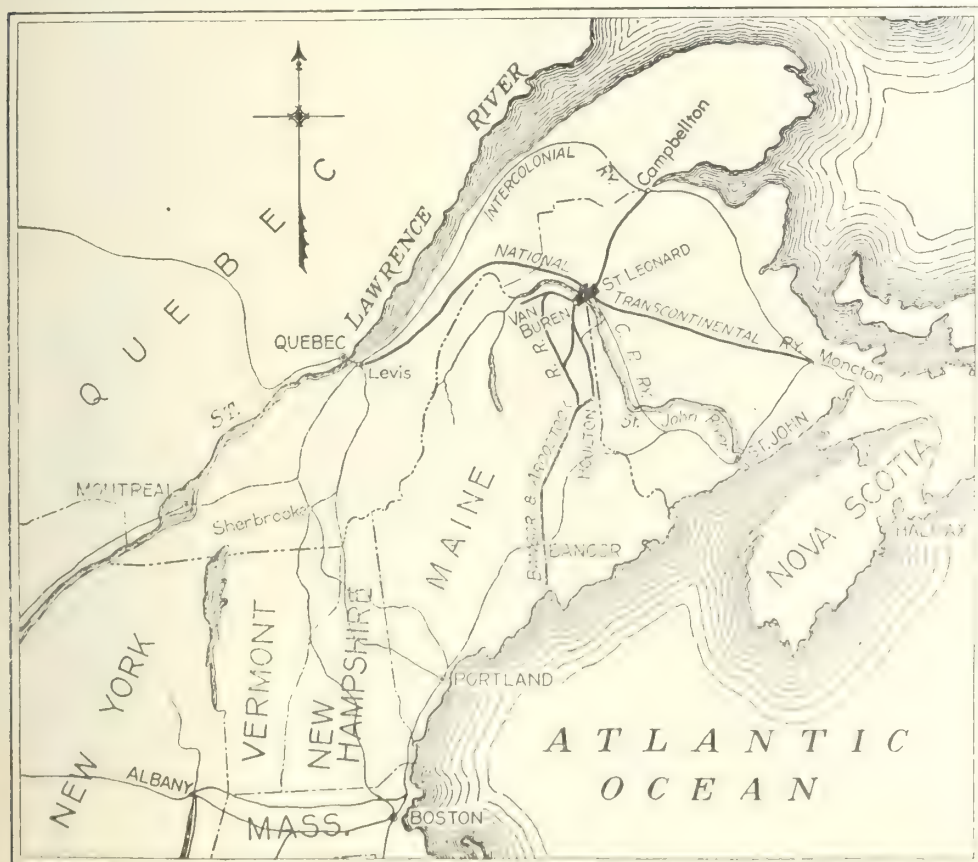
An article on the bridge which has been built recently across the St. John River to connect the Bangor and Aroostook Rd. with the Intercolonial Ry. and the National Transcontinental Ry., and which was published in Canadian Railway and Marine

As stated in our May issue, the connecting line which has been built is 1.36 miles long, of which 1.19 miles is the property of the VanBuren Bridge Co., extending from the United States bank of the St. John River to a connection with and crossing of the

a signal tower at the N. T. R.

The river, which measures from bank to bank 970 ft., is crossed by a bridge consisting of 5 single track steel riveted lattice through spans of 160 ft. each (skew 77°), supported on two concrete abutments and four concrete piers, with approach embankments thoroughly protected by riprap.

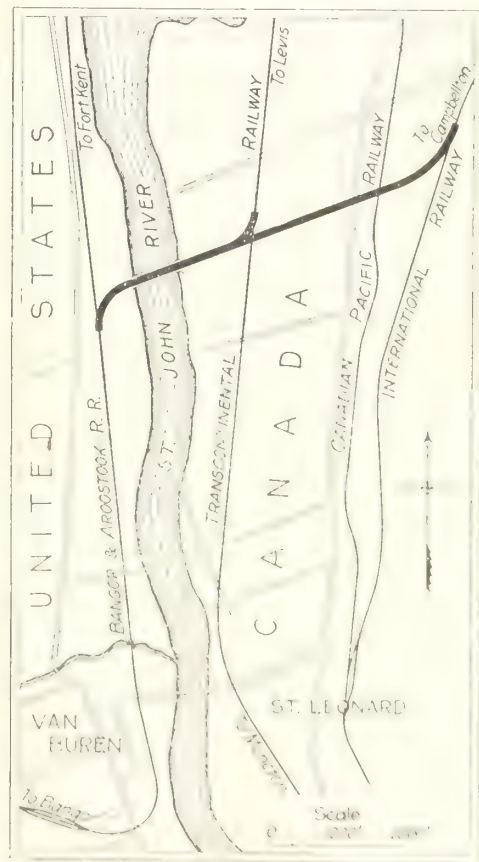
The railway shown on the larger of the two accompanying plans as extending from St. Leonard to Campbellton, N. B., was built



The connection between New Brunswick and Northern Maine by the VanBuren Bridge.

World for May was received such a short time before publication date that it was impossible to have illustrations made to accompany it. We therefore give herewith plans showing the location of the bridge and the connecting railways.

National Transcontinental Ry., thence to a crossing of a C. P. R. branch line, and thence to a junction with the International Branch of the Intercolonial Ry.; the two grade railway crossings being protected by electric power interlocking signals controlled from



Line between St. Leonard and VanBuren, showing Connections and Crossings.

as the International Ry. of New Brunswick, by Thos. Malcolm, of Campbellton. It was acquired last year by the Canadian Government Railways, and is being operated as an Intercolonial branch line.



# Railway Mechanical Methods and Devices.

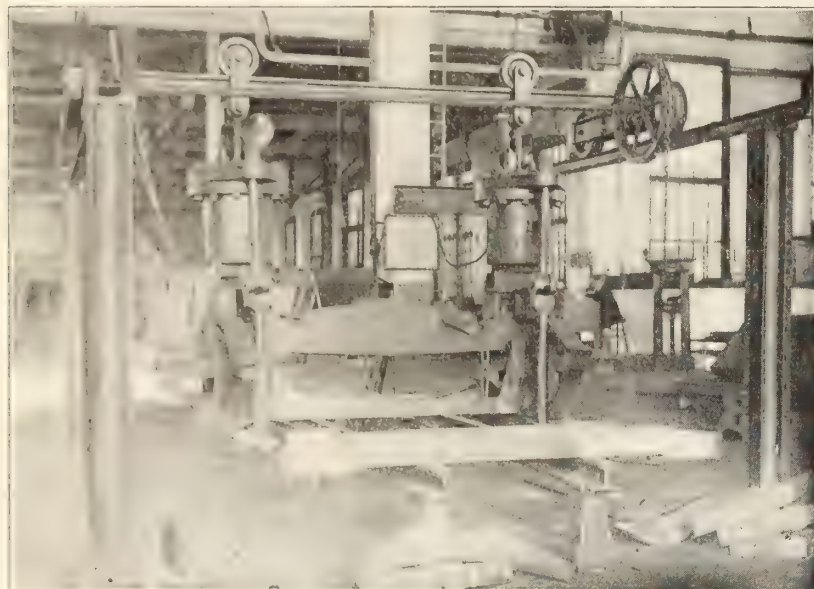
## Assembling Tender Trucks at Stratford Shops, Grand Trunk Railway.

A most valuable method of assembling tender trucks is in use in the G. T. R. shops at Stratford, Ont., and is shown in the accompanying illustration. In placing the truck spring between the spring plank and

the blocking, compressing the leaf springs below the bolster, allowing the introduction of the bolts, which are then secured in place by nuts.

This arrangement has proved very rapid in operation, and requires but a very short time for the whole operation, as compared to the slow process in the former method, outlined earlier in this article.

ing excellent satisfaction. The parts are few, and were reclaimed from the scrap pile, i. e., one four wheel truck equalizer, one 14 in. brake cylinder and an auxiliary reservoir, in fact it would not be necessary to use the reservoir were it not for the machine being a long distance from the main storage tank. The part we had to have manufactured was the knife block, which



Assembling Tender Trucks under Special Hydraulic Arrangement.

truck bolster, it is necessary to apply pressure to the spring in order that the nuts on the truck column bolts may be applied, as the spring after assembling is compressed about 3 ins. The usual practice is to build up a framework encompassing the spring plank and bolster, with a portable hydraulic jack between the bolster and the upper cross beam of the frame to compress the spring. This was the process used in these shops up to recently, but as the application of this framework and the introduction of the hydraulic jack was a very laborious task, taking a long time, it has been abandoned for the method shown in the illustration.

This new method employs a special framework with suspended hydraulic jacks, the whole arranged in such a manner as to require a minimum of manual labor. Four cut down bridge columns arranged in pairs, form an overhead crane runway about 8 ft. above the floor level. A light weight rail between the columns supports a travelling crane also made of light rails. Two hydraulic cylinders, each with a 10 in. piston, are suspended by light trolleys to the travelling crane. From front and rear of the cover casting of each cylinder, there are two part suspending eye bolts, 2 ins. diameter, between the lower ends of which there is a forged bar for a crosshead. Hydraulic power is received from an accumulator about 100 yards down the shop, and is transmitted through two regulating valves, one for each cylinder and mounted on a frame work on the far side of the machine, through an armoured hose to the cylinders.

The truck parts are mounted on a two rail stand beneath the cylinders. The spring plank rests on the lower crosshead when the latter is swung up into place. The hydraulic cylinder rams are blocked up over the bolster, so that when power is let into the cylinders, the plungers force down on

## Air Operated Shearing Machine on Canadian Northern Quebec Railway.

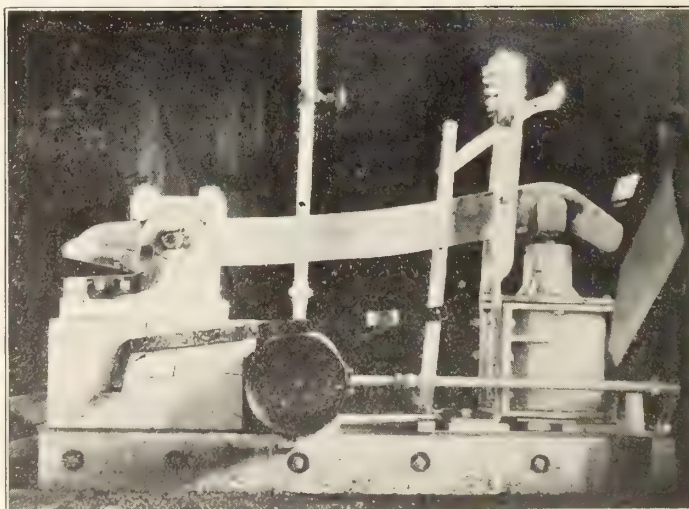
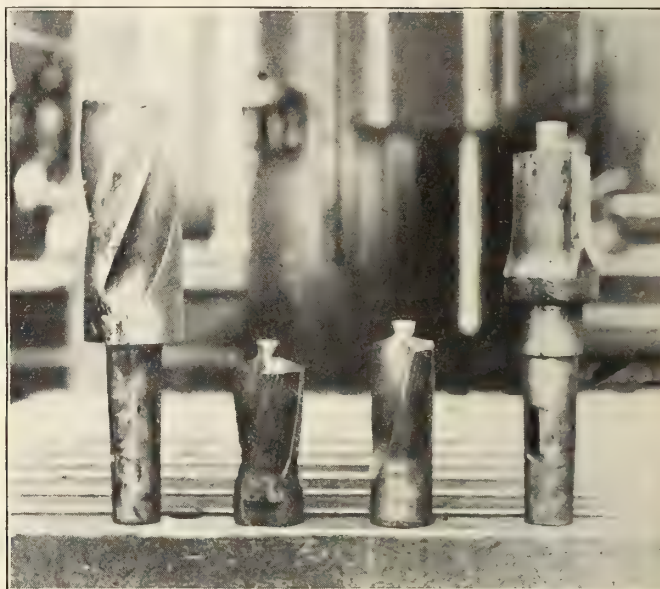
By H. J. White, General Foreman, Car Department, Joliette, Que

A blacksmith's shop is a place where the absence of a good shearing machine is badly felt. This discrepancy was very prominent in our passenger car blacksmith shop at

Drills for Rod Oil Cup Holes.

weighs 285 lbs. The base is of oak, with I beam reinforcement (the beams were reclaimed from old bridge material). The guide at the cylinder end of shears is made from 3 x 3/4 mild steel, with two liners of 3 in. angle iron. The cylinder is operated by a pedal arrangement, thus leaving the operator with both hands free.

The machine easily shears 1 1/4 round or



Air Operated Shearing Machine, Canadian Northern Quebec. Ry.



Tool for Driving Staybolts Without Square Heads.

Quebec, and railway conditions being anything but prosperous, I did not care to approach the management with a request to purchase such a machine. On going into the matter with the Passenger Shop Foreman, J. S. Jackson, we decided to construct one ourselves and the accompanying illustration shows the result of our labor.

These shears are working daily and giv-

1 x 2 inch bar with 85 lbs. pressure of air. We find it excellent when reclaiming bolts. The laborer collecting used bolts in the shop culls all bolts at the machine and passes them on direct to the threading machine. A good point of the machine is that it is fool proof. If the operator puts in a piece of material for shearing which is beyond the capacity of the machine, it simply refuses to



cut, whereas with a belt driven machine, such a case would result in broken gear, etc., and the machine would consequently be out of service for several days.

The cost of construction was \$40. Scrap material which is now reclaimed, made possible by the use of this machine, amounts to about \$25 a month, and as a labor saving device it is worth \$45 a month to the car department alone.

### Drills for Rod Oil Cup Holes, at Stratford Shops, Grand Trunk Railway.

A type of fluted reamer drill of the form shown in the accompanying illustration is used in drilling out the oil cup holes in the G. T. R. shops at Stratford, Ont. The holes are first drilled the size of the opening from the oil pocket into the bearing, and with this as a guide for the tip of the reamer drill, the latter is sunk into the work.

The drills are made of high speed steel, and are fitted on soft steel shanks, as the two outer drills show, the centre two showing the high speed steel section. The cutting end is given a guiding tip, and the body is fluted with either straight or spiral fluting.

### Staybolt Driver at Pere Marquette Railroad Shops.

The accompanying illustration shows a staybolt driving tool as used in the Pere Marquette Rd. Shops, St. Thomas, Ont., which has the advantage of not requiring the staybolts to be squared in the head, as usually practised. The tool consists of a soft steel body, with a taper shank, bored out at the opposite end slightly larger than the staybolt diameter. In one side of the body there is a slot,  $\frac{3}{8}$  in. wide, in which is pinned a high speed steel block,  $\frac{3}{8}$  in. thick and 1 in. square, the periphery of which is milled with teeth. The turning of the tool with a staybolt inside, causes this square block to make a partial turn, gripping the round head of the staybolt.

### Rubber Tensile Testing Machine on Intercolonial Railway.

By G. E. Davidson, Assistant Test Engineer, Moncton, N. B.

The quality of water and air hose depends largely on the quality of the rubber used in its manufacture and those whose business it is to purchase such hose generally judge of its value by cutting a small piece from the rubber lining to feel its elasticity by stretching it. The better the rubber the better the hose. Good rubber stretches like a rubber paper band while the rubber used in inferior hose has so little elasticity that it can scarcely be noticed. The M. C. B. specification for air brake hose embraces this fact and it calls for a definite amount of elasticity and strength.

The accompanying illustration shows a machine for testing the elasticity and strength of rubber used in the formation of air brake, air signal and steam hose, in accordance with the requirements of M. C. B. A. recommended specification. It was designed by the writer at the test laboratory at Moncton shops.

The frame, of  $\frac{5}{8}$  in. bar brass, is 35 ins. high, fitted with brass sockets with base of walnut. At A is shown the piece of rubber to be tested. These sections are cut out of the inner and outer tubes of the hose, and shaped by a specially designed die. They are first made in strips 1 in. wide, and 5 ins. long, and then cut down to  $\frac{1}{2}$  in. wide for a distance of  $2\frac{1}{2}$  ins. at centre. The test

pieces are held at each end by wooden grips, B.

The elasticity of the rubber is determined by the distance (marks placed 2 inches apart), it will stretch before breaking. The required elongation for test pieces taken from air and signal hose is 10 inches, but for steam hose, other qualities than elasticity are essential to withstand the severe effect of the steam on the rubber, and a stretch of 6 ins. is considered good for steam hose. The strength of the test piece is indicated on the spring C (capacity 50 lbs.) and should show a strength of from 800 to

outer face of the cone b, there is a four part ring, e, held together by a spring in an annular groove around the outer face. Several sizes of these rings are employed, to accommodate varying inside diameters of bushings; one of the rings is shown at f. The bushing to be slotted g, is slipped over the ring, and held in place by a clamp on the outer end of the pin d. The cone b is indexed with holes corresponding to the number of slots to be milled, the index pin being in the back face of the face plate. With this indexing as a guide, the first hole is set up, the bushing centred, and the mil-



Rubber Tensile Testing Machine.

1,200 lbs. a square inch. Bevelled gear in box, D, with crank regulates the travel of the spindle, E, the maximum travel being 12 inches.—Can. Gov. Ry.'s Employees' Magazine.

### Milling Slots in Piston Valve Bushings, at Michigan Central Railroad Shops.

The customary practice in machining the steam passage slots in piston valve bushings, appears to be the use of the end mill, with the bushing mounted on a table in front of the mill. This was the practice in the Michigan Central Rd. Shops at St. Thomas, Ont., until recently. The bushings used on the company's locomotives have either 7 or 9 slots. Milling these out with the end mill in the usual manner, the cost was 40 cts. per slot; with the method now employed the cost has been reduced to 40 cts. for the whole set of holes, a reduction of from 80% to 90%.

The jig and tools employed in this new method are shown in the accompanying illustration. The jig consists of a special face plate a, pivoted on the front of which is a tapered cone b, the larger end of which is away from the face plate, towards which it may be forced by the hand wheel c, on the inner end of the pivotal pin d. Around the



Jig and Tools for Milling Piston Valve Bushing Slots.

ling arbor h, sunk into the slot the required depth. The operation is performed on a horizontal miller.

**Railway Construction Balances in Alberta.**—The proceeds of the securities of the various railways building lines under a provincial guarantee of bonds are held in the banks at Edmonton and paid out by the Provincial Treasurer, on receipt of authenticated construction certificates. The Premier informed the Legislature recently that the following balances were on hand to meet certificates as they were presented: Alberta and Great Waterways Ry., \$5,309,874.25; Canadian Northern Ry., \$1,118,969.85; Canadian Northern Western Ry., \$2,759,652.39; Grand Trunk Pacific Branch Lines, \$1.00; Edmonton, Dunvegan and British Columbia Ry., \$1,639,081.39; Lacombe and Blindman Valley Ry., \$140,186.91; Total, \$10,997,755.79. There had been paid to the several railways as interest on the proceeds of the bonds held awaiting expenditure: Alberta and Great Waterways Ry., \$1,302,276.47; Canadian Northern Ry., \$223,992.95; Canadian Northern Western Ry., \$88,149.29; Grand Trunk Pacific Branch Lines, \$107,676.34; Edmonton, Dunvegan and British Columbia Ry., \$270,105.15; Lacombe and Blindman Valley Ry., \$2,619.10; Total, \$1,995,119.30.



## Orders by Board of Railway Commissioners for Canada.

1. With June, 1914, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers have at all times a paper having a continuous record of the Board's proceedings. No other publication has this feature.

The dates given of orders, immediately following the numbers, are those on which the orders were drawn.

General order 102, Feb. 17, 1913, re handrails and overhead headlight. This order is given in full in another page.

General order 141, Apr. 15.—Dismissing application for removal of application dealing with Sec. 8, which is reserved for further consideration.

General order 142, Apr. 17.—Amending the terms and conditions endorsed on Express Merchandise Receipts.

General order 143, Apr. 29.—Ordering railway companies to make refunds on unused tickets within specified times. This order is given on another page.

23545, Apr. 13.—Authorizing C.P.R. to remove regular agent at St. Constant Station, Que.

23546, Apr. 16.—Relieving C.P.R. from speed limitation of 25 miles an hour on its Weyburn-Stirling Branch, mileage 0 to 49.2 east of Stirling Ave.

23547, Apr. 14.—Approving clearances between G.T.R. and poles carrying G.N.W. Telegraph Co. and railway wires between Guy St. and St. Henri Station, Montreal, Que.

23548, Apr. 16.—Dismissing complaint G. E. Earl and others of Winchester, Ont., against proposed withdrawal by Bell Telephone Co. of its service there.

23549, Apr. 13.—Ordering C.P.R. and Canadian Northern Ry. to flag all switching movements over Victoria St., Tweed, Ont.; speed over crossing limited to 10 miles an hour.

23550, Apr. 14.—Approving Salisbury and Albert Ry. Standard Freight Tariff, C.R.C., 3, effective Apr. 1.

23551, 23552, Apr. 19.—Approving Western Dominion Ry. location from main line, as located, in Sec. 26-6-30, w. 4 m., to south fork of Old Man River, near McDonald coal mines in Kootenay Pass, Alta., 30.78 miles, and from Pincher Creek station to international boundary in Sec. 2-1-23, w. 4 m., mileage 1 to 68.36, Alta.

23553, Apr. 16.—Approving agreement between Bell Telephone Co. and North Easthope Tp., Ont., March 27.

23554, Apr. 15.—Authorizing Kettle Valley Ry. to connect with Vancouver, Victoria and Eastern Ry. at Princeton, B.C.

23555, Apr. 17.—Authorizing G.T.R. to build extension of siding for Beaver Board Co., on Lot 48, Con. 1, Thorold Tp., Ont.

23556, Apr. 19.—Authorizing C.P.R. to use bridge 65.4, Havelock Subdivision, near Addington station, Ont.

23557, Apr. 15.—Authorizing C.P.R. to divert original road allowance along north boundary of Sec. 12-8-17, w. 2 m., at mileage 15.08, Weyburn-Stirling Branch.

23558, Apr. 19.—Extending to May 31 time within which C.P.R. was required to complete certain branch lines in York Tp., Ont., for Canadian Kodak Co.

23559 to 23561, Apr. 19.—Authorizing C.P.R. to use bridges 67.8, Havelock Subdivision; 5.7, Toronto Subdivision, and 75.6, Havelock Subdivision, Ont.

23562, Apr. 19.—Approving C.P.R. clearances of entrances to locomotive repair shop at Schreiber, Ont.

23563, Apr. 19.—Amending order 23454, March 25, re highway over C.P.R. in Burwash Tp., Ont.

23564, Apr. 19.—Approving C.P.R. clearances at door openings into car repair shops at Schreiber, Ont.

23565 to 23568, Apr. 19.—Authorizing C.P.R. to operate bridges 24.1, Toronto Subdivision; 56.5, Havelock Subdivision; 10.7 and 5.75, Toronto Subdivision, Ont.

23569, Apr. 16.—Approving C.P.R. clearances on siding of Masson Milling and Trading Co., at mileage 100.10, Ottawa Subdivision, Ont.

23570, Apr. 16.—Approving proposed Supplement 7 to Express Classification for Canada, '3.

23571, Apr. 19.—Approving agreement between Bell Telephone Co. and Sutton and North Gwillimbury Telephone Co., Apr. 1.

23572, Apr. 21.—Ordering C.P.R. forthwith to reduce its rate on alfalfa meal, in carloads, from Enderby to Duncan, B.C., to 30c. per 100 lbs.

23573, Apr. 21.—Approving change in location of G.T.R. siding for Breithaupt Leather Co., Berlin, Ont.

23574, Apr. 21.—Authorizing Drury, Denison and Graham united municipalities, Ont., to build highway crossing over Algoma Eastern

Ry. between Lots 6 and 7, Con. 2, Drury Tp., Ont.

23575, Apr. 20.—Ordering G.T. Pacific Ry. to build highway crossing over its tracks opposite Kyle Ave., Vanderhoof, B.C.

23576 to 23578, Apr. 20.—Relieving C.P.R. from providing further protection at highway crossings near Drummondville Jct., Que; Thorah Tp., Ont., and Leonard station, Ont.

23579, Apr. 20.—Approving C.P.R. siding and two branches for Alberta Portland Cement Co., Sandstone, Alta.

23580, Apr. 21.—Authorizing G.T.R. to move south gate at crossing of Niagara St., St. Catharines, Ont.; Niagara, St. Catharines and Toronto Ry. to pay cost of moving and altering gates, and thereafter to pay G.T.R. half maintenance and half wages of watchman.

23581, Apr. 20.—Approving agreement between Bell Telephone Co. and Ivy Thornton Telephone Co., July 17, 1912.

23582, Apr. 21.—Authorizing Canadian Northern Ry. and C.P.R. to operate over crossing in Sec. 31-29-9, w. 3 m., Sask., without first stopping.

23583, Apr. 21.—Relieving C.P.R. from speed limitation on trains on its Swift Current to Brooks Branch, mileage 0 to 33, Sask.

23584, Apr. 21.—Approving agreement between Bell Telephone Co. and Aberdeen-Plummer Centre Line Telephone Association, Mar. 9.

23585, 23586, Apr. 22.—Relieving C.P.R. from speed limitation of 30 miles an hour, mileage 0 to 28.2, and of 15 miles an hour, mileage 28.2 to 84.2, on its Kipp-Aldersyde Branch, Alta.

23587, Apr. 21.—Approving location of C.P.R. station shelter at Lot 31, Con. 1, Darlington Tp., Ont.

23588, Apr. 21.—Authorizing G.T.R. to build siding at Bridgeburg, Ont., for Tuttle & Bailey Mfg. Co.

23589, Apr. 22.—Ordering Canadian Northern Ry. to rebuild fence on each side of track between mileage 40 and 41, Rapid City Subdivision, Man., work to be completed by May 31.

23590, Apr. 22.—Ordering Canadian Northern Ry. to put 12 in. corrugated iron pipe under embankment at mileage 40.7, on C. A. Biccum's property, Cardlaw, Man.

23591, Apr. 22.—Amending order 23550, Apr. 14, re Salisbury and Albert Ry. Tariffs, by substituting Albert for Harvey when it occurs in the name of the railway.

23592, Apr. 26.—Approving revised location of C.P.R. Swift Current Northwesterly Branch from mileage 111.95 to 122.58, Alta., and rescinding order 22825, Nov. 5, 1914.

23593, Apr. 26.—Extending to June 1 time within which C.P.R. shall install gates at crossing of Park Ave., Montreal.

23594, Apr. 24.—Approving C.P.R. clearances at Thomas Organ Co.'s siding, mileage 87.64, London Subdivision, Ont.

23595, Apr. 24.—Authorizing C.P.R. to build tunnel at mileage 40.4, Boundary Subdivision, B.C.

23596, Apr. 22.—Amending order 22691, Oct. 9, 1914, re C.P.R. grade separation at North Toronto, Ont., to provide that approach to subway at Yonge St., on southerly side, shall have grade of 5%, instead of 2½% as shown on plan referred to in par. 1 of order.

23597, Apr. 27.—Relieving C.P.R. from speed limitation of 15 miles an hour on its Lacombe Easterly Branch, between Castor and Coronation, Alta.

23598, Apr. 22.—Authorizing Esquimalt and Nanaimo Ry. to build highway crossing between Secs. 4 and 11, Bright District, B.C.; cost to be paid by B.C. Public Works Department, E. & N. Ry. to close Brenton's Crossing at that point.

23599, Apr. 22.—Ordering C.P.R. to stop trains 21 on flag at Kempton, Ont., and 22 when desired by passengers for Kempton.

23600, Apr. 27.—Authorizing C.P.R. to use bridge 53.2 near Arnprior, Ont.

23601, Apr. 27.—Approving plan and specifications of drainage works to be built under G.T. Pacific Branch Lines Co. and Canadian Northern Ry. near Canora station, Sask.

23602, Apr. 24.—Authorizing G.T.R. to build siding for Sarnia Metal Products Co., Sarnia, Ont.

23603, Apr. 27.—Approving C.N. Quebec Ry. revised location at Shawinigan River, mileage 86.69 from Quebec.

23604, Apr. 27.—Authorizing Town of Montreal East, Que., to build Marien Ave. across C.N. Quebec Ry.

23605, 23606, Apr. 28.—Relieving C.P.R. from speed limitation of 15 miles an hour on extension of its Lacombe Branch from Stettler to Castor, mileage 49.6 to 85; and of 20 miles an hour on its Coronation Subdivision, Kerrobert to Monitor, mileage 0 to 74.6, Alta.

23607, Apr. 27.—Authorizing Lake Erie and Northern Ry. to build across Graham Ave., Brantford Tp., Ont.

23608, Apr. 29.—Authorizing Van Buren Bridge Co. to open for traffic its line from con-

nection with Intercolonial Ry. International Branch, near St. Leonard, N.B., to International boundary, about 1.42 miles.

23609, Apr. 29.—Authorizing Canadian Northern Ry. to build across road between Secs. 28-29, Tp. 19, R. 22, w. 2 m., Sask.

23610, Apr. 28.—Authorizing Algoma Central and Hudson Bay Ry. to remove regular agent at Frater station, Ont.

23611, Apr. 28.—Approving Toronto, Hamilton and Buffalo Ry. plans showing automatic block signals to be installed between Hamilton and Brantford, Ont.

23612, Apr. 28.—Relieving Central Vermont Ry. from providing further protection at crossing of public highway, ¼ mile north of Stanbridge East station, Que.

23613 to 23617, Apr. 27, 28.—Ordering Bell Telephone Co. to raise its wires at five points on the London and Port Stanley Ry., at expense of the London Railway Commission, London, Ont.

23618 to 23623, Apr. 27, 28.—Ordering Bell Telephone Co. to raise its wires at 6 points on the London and Port Stanley Ry., at expense of the London Railway Commission, London, Ont.

23624, Apr. 29.—Authorizing Van Buren Bridge Co., National Transcontinental Ry. and C.P.R. to operate over crossings in St. Leonard Parish, N.B., without first stopping; and relieving them from maintaining night signalman to operate interlocking plants there.

23625, Apr. 29.—Authorizing C.P.R. to open for traffic its Arbog Subdivision, mileage 46.5 to mileage 47.7, Man.

23626, Apr. 28.—Dismissing G.T.R. application for order amending order 22317, July 24, 1914, to provide that Standard Crushed Stone Co. shall convey necessary right of way to applicant.

23627 to 23630, Apr. 29.—Authorizing Canadian Northern Ry. to build across public roads at 4 points in Saskatchewan.

23631, Apr. 28.—Approving agreement between Bell Telephone Co. and Rose Mutual Telephone Association, June 15, 1914, as transferred to Rose Telephone Co. of Algoma, Ltd.

23632, Apr. 28.—Rescinding order 10019, Mar. 30, 1910, and approving agreement between Bell Telephone Co. and Woodbridge and Vaughan Telephone Co., Apr. 20.

23633, Apr. 30.—Approving C.P.R. plan showing signals controlling crossing switches between Kingston and Havelock Subdivisions at Sharbot Lake, Ont.

23634, Apr. 30.—Authorizing G.T. Pacific Ry. to remove diamond at crossing of Edmonton Interurban Ry. at 27th St., Edmonton, Alta.

23635, Apr. 30.—Approving location of C.N. Alberta Ry. combined station and section house at Villeneuve.

23636, May 1.—Extending to May 17 time for commencing service between Quebec Oriental Ry. eastbound train and the I.R.C. Ocean Limited, as provided in order 23106, service thereafter to be from May 1.

23637, Apr. 27.—Ordering Great North Western Telegraph Co. to raise its wires at crossing of London and Port Stanley Ry., near Elm St., St. Thomas, Ont.

23638, Apr. 28.—Dismissing American Coal and Coke Co.'s application for re-hearing of complaint that Michigan Central Rd. has been holding cars for orders at Windsor, Ont., and has refused to take coal to Detroit, Mich., until such orders were received.

23639, Apr. 30.—Authorizing Berlin and Northern Ry. to operate over G.T.R. on Wellington St., Berlin, Ont., without first stopping; speed limited to 15 miles an hour; and amending order 21778, May 7, 1914.

23640, Apr. 30.—Prohibiting G.T.R. from allowing cars to stand on side track west of main track at crossing of Grey St., Brantford, Ont., closer than 150 ft. from street line.

23641, Apr. 13.—Amending order 23406, Mar. 12, re highway crossing of C.P.R. in Sec. 21-12-28, w. 3 m., Sask.

23642, May 1.—Ordering C.P.R. to build farm crossing, with gates, near Station 2450, about mileage 46.4, for R. G. Shackleford, Keyes, Man.

23643, May 3.—Authorizing C.P.R. to remove regular agent at Pointe au Chene, Que., and caretaker to be appointed.

23644, May 3.—Authorizing G.T. Pacific Ry. to remove regular agent at Uno station, Man., caretaker to be appointed.

23645, May 3.—Authorizing C.P.R. to build spurs for F. Gobeille and Daoust, Lalonde & Co., Montreal.

23646, May 3.—Ordering Canadian Northern Ry. to commence fencing its line between mileage 39 and 55.7, Jackfish Branch, and complete same with all dispatch.

23647, Apr. 30.—Authorizing C.P.R. to operate over bridge across Pitt River, mileage 109.7, Cascade Subdivision, B.C.

23648, May 3.—Authorizing Lake Erie and Northern Ry. to build across Mount Pleasant Road, Brantford Tp., Ont.

23649, May 3.—Relieving G.T. Pacific Branch Lines Co. from erecting fences, gates, and cattle guards on its Regina-Boundary Branch, at mileage 147.57 and 147.59.



### Railway Finance, Meetings, Etc.

**Canadian Northern Ry.**—The following notice was issued towards the end of April: "The directors regret that the net earnings for the half year ended Dec. 31, 1914, are insufficient to enable them to declare any dividend to be payable on the 5% income charge convertible debenture stock on May 2, and they think it proper to point out to the holders of that stock that the earnings of the railway for the first nine months of the current financial year have been so reduced by conditions arising from the war that it is unlikely that any interest on the stock will be payable in Nov. next. The directors hope that a large crop will so improve business conditions throughout the Dominion that the payment of interest may be resumed in 1916. It has been represented to the directors that an effect of the war has been to postpone the rapid development of business on the railway and consequently to postpone the value of the option to holders of the 5% income charge convertible debenture stock to convert their holdings into ordinary shares, which option expires on Jan. 1, 1919. The directors have therefore resolved to extend the period of the option for three years, and on each 1st of January and 1st of July until Jan. 1, 1922, the holders of the stock will have the option on 60 days previous notice of converting their stock into fully paid shares of the company at the fixed rate of \$100, or £20 11s. 5d., of this stock for each \$100 of shares."

**Grand Trunk Ry.**—The certificate of the chairman of a general meeting of shareholders held in London, Eng., April 15, states that a resolution had been passed assenting to the provisions of the G. T. Act of 1915. The act authorizes the G. T. R. to assist financially, either by the purchase of shares or otherwise, any subsidiary company. The reason for obtaining this act, it was stated to the Dominion Parliament, was that G. T. R. securities are more readily marketable than those of the subsidiary companies.

**Lake Erie and Detroit River Ry.**—The annual meeting was held at Detroit, Mich., May 4. The board for the current year is as follows: P. H. King, President; A. Leslie, Vice President; F. H. Alfred, H. L. McDowell and J. A. McDougall.

**Maritime Coal, Ry. and Power Co.**—The report for the year ended Feb. 28, shows gross profits of \$122,473, an increase of \$5,512, and net profits of \$111,211, an increase of \$20,076. With the balance of \$90,757 brought forward from the previous year there was a total of \$201,968 available for distribution, \$35,000 was transferred to general reserve and \$3,000 to depreciation and renewal reserve; bond interest amounted to \$93,601; \$3,842 was transferred to sinking fund reserve, \$7,869 written off securities and \$5,000 off coal stocks to provide for possible depreciation in value; leaving a balance of \$53,654 to be carried forward. The balance sheet shows total assets of \$3,825,365, of which \$3,416,950 represents property, plant, etc. Investments amount to \$56,500, cash \$26,828, accounts receivable \$132,074, and other liquid assets, including inventory, \$197,576. Current liabilities are \$56,440. With the additions for the year reserve funds total \$103,761. Following are the officers and directors: President, W. Hanson; Vice President, A. E. Dymont; Hon. N. Curry, G. R. Hulme, A. MacLaurin, Wm. L. Madgen, Hon. W. Mitchell, W. H. Tottier.

**New York Central Lines.**—It has been reported in New York by J. P. Morgan and Co., bankers, that substantially all of the \$100,000,000 of 20-year 6% convertible bonds recently offered to the company's shareholders have been subscribed for. The proceeds of the bonds will be used to fund

an equal amount of the company's present unfunded debt, and in the acquisition of property.

**The Pere Marquette Rd.** is to be sold on or before Oct. 1, under an order of the U.S. District Court, at Detroit, Mich.

**Toronto, Hamilton & Buffalo Ry.**—The Michigan Central Rd. report for the past fiscal year says: "This company advanced to the Toronto, Hamilton & Buffalo Ry. Co. during the year, on its promissory notes, bearing interest at 6% per annum, \$100,000,000, as its one-sixth proportion of the estimated cost of construction of The Erie & Ontario Ry., a new railway incorporated May 27, 1914, and extending from a connection with the T. H. & B. Ry. at Smithville to Port Maitland, Ont., on Lake Erie, about 18 miles. Agreement for amalgamation of this road with the T. H. & B. R. was approved by the Governor in Council Dec. 15, 1914 and was made effective on filing at Ottawa, Jan. 30, 1915. The road was completed and placed in operation Dec. 22, 1914, between Smithville and Dunnville, on the Grand River, 14.9 miles. It is expected, owing to the great natural facilities afforded at Dunnville and along the Grand River to Port Maitland, that the road will attract many industries to the territory which it serves."

### Inverness Railway and Coal Company to Default on Bond Interest.

A meeting of 5 per cent first mortgage bond holders will be held in Toronto, June 30, to consider resolutions to the following effect: That the payment of interest on bonds and payments of sinking fund be postponed until such time after the termination of the war as may be determined at the meeting; that the company may create prior lien securities; that defaults under the trust deed and bonds be waived and that the company retain possession of and operate the property as if no default had occurred.

The Inverness Ry. & Coal Co.'s railway extends from Point Tupper to Inverness, N.S., 61 miles, with a total track of 65.5 miles, laid with 56 lb. rails. It was chartered as the Inverness & Richmond Ry. Co., in 1887, the road being opened for traffic, June 15, 1901. In 1902 it was reorganized under the present corporate title and absorbed the Inverness-Richmond Collieries & Ry. Co. of Canada, Ltd. In addition to operating the railway it also operates a colliery at Inverness the output of which for the year ended June 30, 1913, the latest figures available, was 278,197 tons.

The company's general officers are: Sir Wm. Mackenzie, President; Sir Donald Mann, Vice President; L. W. Mitchell, Secretary and Treasurer, Toronto; J. McGilivray, General Manager, Inverness, N.S.

The funded debt consists of first mortgage 5 per cent. 20 year \$500 gold coupon bonds, due May 1, 1922, interest payable May 1 and No. 1. The total issue is \$3,000,000, of which at June 30, 1913, \$869,000 was held in the treasury as security for outstanding loans.

**The International Railway Fuel Association's** seventh annual convention was held at Chicago, Ill., May 17 to 20, when papers were read and discussed, treating with powdered coal, its preparation and use in locomotive and stationary boilers; fuel conditions in South America; analysis and dependent sequence as a guide to fuel economies; smoke prevention; standardization of coal preparation; fuel stations; relation of mechanical stokers to the fuel problem; fuel oil for locomotive use; waste of fuel in railway stationary plants, and storage coal.

23650. May 3.—Authorizing Lake Erie & Northern Ry. to build across Scarie St, Brantford Tp., Ont.

23651. May 3.—Approving Lake Erie & Northern Ry. revised location between Lorne Bridge and Harold Ave., mileage 21.1 to 21.9, Brantford, Ont.

23652. May 3.—Authorizing C.N. Ontario Ry. to build branch for Dominion Match Co., Deseronto, Ont.

23653. May 4.—Approving Kettle Valley Ry. revised location between mileage 69 and 70.14 west of Penticton, B.C.

23654. May 3.—Extending to June 15, time within which Great Northern Ry. shall install bell at Front St., near intersection of Columbia St., New Westminster, B.C.

23655. May 4.—Authorizing Canadian Northern Ry. to remove station agent at Mikado, Sask., caretaker to be appointed.

23656. May 4.—Ordering Edmonton, Dunvegan & British Columbia Ry. to build farm crossing for W. J. Hunt, Eunice, Alta.; fencing between mileage 60 and Athabasca Crossing, mileage 131, to be commenced at once and completed with all dispatch.

23657. May 4.—Ordering Ottawa & New York Ry. on and after May 30, to schedule its northbound morning train to arrive at Finch at 9.43 and leave at 9.48; and southbound and northbound evening trains at 5.50; and that C.P.R., on and after May 30, schedule its westbound morning local to arrive at Finch at 9.45, its eastbound morning local at 9.47, and its eastbound evening local at 5.50; both railways to hold trains, when necessary, for connection, up to 20 minutes after schedule time to leave Finch; and rescinding order 21751, Apr. 29, 1914.

23658. May 4.—Approving C.N. Ontario Ry. plan 33362 of subway to be built at St. Laurent Road, mileage 47.26 from Hawkesbury, at Cartierville, Que.

23659, 23660. May 5.—Authorizing C.P.R. to operate over bridge at Harrison Mills, B.C., without first stopping, and over bridge 16.6 over Eagle River, Shuswap, B.C.,

23661. May 6.—Authorizing Hydro-Electric Power Commission of Ontario to erect wires across C.P.R., at King St., Chatham, Ont.

23662. May 7.—Rescinding order 23541, Apr. 14, re night signalman at C. N. Quebec Ry. and National Transcontinental Ry. crossing at Tawachiche, Que.

23663. May 4.—Ordering Great Northern Ry. to provide daily (except Sunday) mixed train service on its Oroville-Princeton Subdivision, in each direction, commencing July 1, to remain in effect during fruit and vegetable shipping season.

23664. May 5.—Authorizing C.P.R. to build McMillan St., across its line at Elfrs, Sask.

23665. May 8.—Rescinding order 21522, Mar. 19, re stopping C.P.R. train 22 at St. Clet, Que.

23666. May 5.—Amending order 21959, June 9, 1914, to provide that Goyette, Lemoyne, Que., pay \$93 of cost of crossing 400 ft. east of west switch of passing siding, C.P.R. to pay \$50, being difference between cost of 36 in. and 18 in. pipe culvert.

23667. May 8.—Ordering that 20% (not exceeding \$5,000) of cost of building subway across Westminster Road (13th St.) Lethbridge, Alta., be paid out of railway grade crossing fund; balance apportioned between railway and city proportionately.

23668. May 10.—Authorizing Lake Erie and Northern Ry. to operate for construction purposes only, over crossing of G.T.R. at Simcoe, Ont.; watchman at crossing to be appointed and paid by L. E. & N. R.

23669. May 11.—Authorizing C.P.R. to use bridge 67.9 on its Georgian Bay and Seaboard Subdivision, Ont.

23670. May 10.—Authorizing C.P.R. to build bridge 107.2 over Shaw's Creek, near Severn Falls, Ont., and rescinding order 23463, Mar. 29.

23671. May 8.—Rescinding order 23599, Apr. 22, and ordering C.P.R. to stop its westbound through passenger train, leaving Montreal at 10 p.m. daily, at Kempton, for passengers for Toronto, or points west thereof; and to stop its eastbound Montreal express leaving North Toronto at 10 p.m. daily, at Kempton, for passengers from Toronto, or points west thereof.

23672. May 11.—Authorizing C.P.R. to use bridge at Cornelia St., Smith's Falls, Ont.

23673. May 11.—Approving plan and specifications of Saskatchewan Board of Highway Commissioners, showing drainage works to be built under Canadian Northern Ry. in n. w. 1/4, Sec. 35-30-4, w. 2 m.; work to be done under supervision of C.N.R. engineer, and any dispute to be settled by the Board's engineer.

23674. May 10.—Authorizing, until Sept. 30, Canadian Northern Ry. to carry traffic over its Oakland Branch, Man., from mileage 42 to end of track, 12 miles; speed of trains limited to 12 miles an hour.

23675. May 10.—Approving Edmonton, Dunvegan & British Columbia Ry. revised location, mileage 305.60 to 331.77, Alberta.

23676. May 10.—Authorizing Michigan Central Rd. from providing further protection at crossing of Ontario Road, Welland, Ont.

23677. May 8.—Extending, for three months from date, time within which G.T.R. shall build siding connecting with Michigan Central Rd. branch in Crowland Tp., Ont.



# The Dominion Government Operates the National Transcontinental Railway.

The Canadian Government Railways having taken over, on May 1, the operation of the National Transcontinental Ry. from Moncton, N.B., to Winnipeg, and the Grand Trunk Pacific Ry.'s Lake Superior Branch from Fort William to Superior Jct., Ont., the jurisdiction of the heads of departments of the C.G.R. at Moncton, has been extended over these lines.

F. P. BRADY, heretofore General Superintendent, Canadian Government Rys., Moncton, has been appointed General Superintendent, National Transcontinental Ry. between Quebec and Winnipeg, and the Grand Trunk Pacific Ry.'s Lake Superior Branch between Fort William and Superior Jct. Office, Cochrane, Ont.

J. K. McNEILLIE, heretofore Superintendent, District 3, Eastern Division, C.P.R., who has been appointed to succeed F. P. Brady as General Superintendent at Moncton, N.B., will have jurisdiction over the N.T.R. east of Quebec as well as the I.C.R. and P.E.I.R.

A. J. GORRIE, at one time General Superintendent, Canadian Northern Quebec Ry., and subsequently receiver Quebec & Lake St. John Ry., has been appointed Superintendent, District 1, N.T.R., Quebec to O'Brien, Ont. Office, Quebec, Que.

J. J. McMANUS has been appointed Assistant Superintendent, District 1, Quebec to O'Brien, Ont. Office, Quebec, Que.

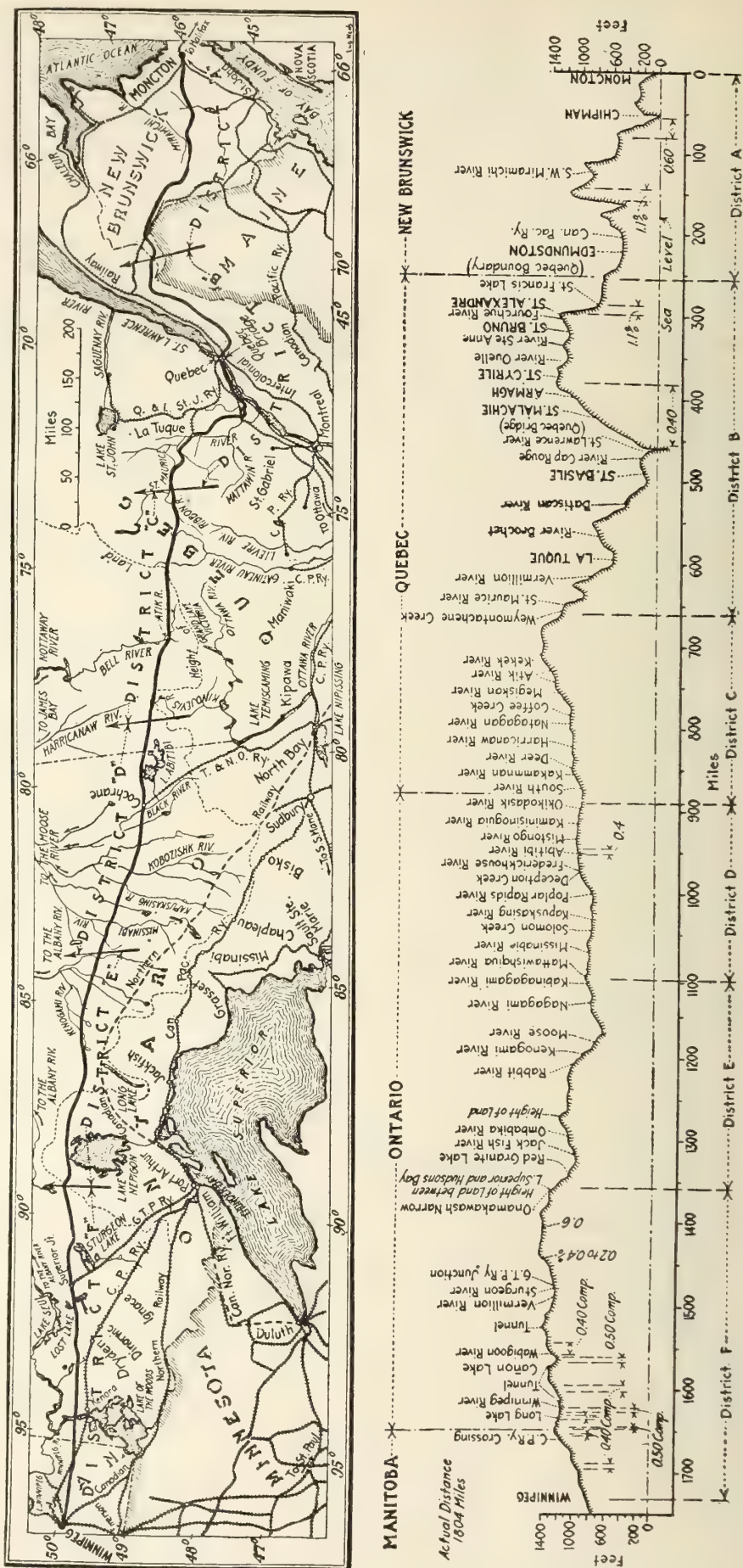
W. B. WAY, heretofore Inspector of Transportation, Eastern Lines, C.P.R., Montreal, has been appointed Superintendent, District 2, N.T.R., O'Brien to Armstrong, Ont., excluding O'Brien. Office, Cochrane, Ont.

H. A. RYAN, heretofore Assistant Superintendent, N.T.R., between Edmundston, N. B., and St. Chrysostome, Que., at Monk, Que., has been appointed Assistant Superintendent, N.T.R., District 2, O'Brien to Armstrong, Ont., excluding O'Brien. Office, Cochrane, Ont.

R. S. RICHARDSON, heretofore Assistant Superintendent, District 3, I.R.C., Moncton, N.B., has been appointed Superintendent, District 3, N.T.R., Armstrong, Ont., to Winnipeg, excluding Armstrong and Superior Jct. to Fort William, Ont. Office, Winnipeg.

Quebec Press Dispatch, May 23.—"The first through train over the N.T.R. from Winnipeg reached here at 9.30 p.m. yesterday consisting of two cars, carrying officials, including: F. P. Gutelius, General Manager Canadian Government Railways; F. P. Brady, General Superintendent; C. A. Hayes, General Traffic Manager; H. H. Melanson, General Passenger Agent; C. B. Brown, Chief Engineer; W. A. Cowan, Divisional Engineer; Gordon Grant, Chief Engineer N.T.R., and others. The train left Winnipeg May 18, and travelled by day. The officials report the road in excellent condition, and announce the inauguration of the passenger service for June 1."

An act was passed by the Dominion Parliament in 1903 providing for the building of the National Transcontinental Ry. This act provided that the Dominion would build a line from Moncton, N.B., to Winnipeg, Man., while the Grand Trunk Pacific Ry. Co., incorporated by another act, was to build a line from Winnipeg to the Pacific Coast, the Dominion guaranteeing the company's bonds upon certain conditions. The line was to be laid out with 0.4% gradient against east bound traffic and 0.6% against west bound traffic, and the construction throughout was to be upon the most modern lines. The specifications for the eastern division to be built under the charge of the



Map and Profile, National Transcontinental Railway, Moncton, N.B., to Winnipeg, Man., 1804.5 miles.



Commissioners of the National Transcontinental Ry., were to be subject to the approval of the Grand Trunk Pacific engineers, while the Western Division was to be built by the G.T. Pacific Ry. under the inspection of an engineer appointed by the Dominion Government. The act further provided that when the Eastern Division was completed it was to be operated in conjunction with the Western Division, as one through line by the G.T.P.R., the rental to be paid being 3% a year upon the actual cost of the line. No rental was to be payable during the first seven years of the 50-year period for which the lease was to run.

Track laying on the Eastern Division was finished by the end of 1913, but the line was not sufficiently completed until the autumn of 1914, to enable the Government to enter upon negotiations with the com-

Manager, Canadian Government Railways, announced that effective May 1, the jurisdiction of the heads of departments of the Canadian Government Railways at Moncton, had been extended over National Transcontinental Ry. and the G.T.P R.'s Lake Superior Branch.

The G.T.P.R.'s Lake Superior Branch from Fort William to Lake Superior Jct., 190 miles, has been operated by that company for some time, together with the 258 mile section of the N.T.R., from Lake Superior Jct. to Winnipeg, as the G.T.P.R. Lake Superior Division. Power to acquire this line by lease or otherwise for five years, together with its terminal facilities and accommodation works, was given at the Dominion Parliament's last session. The lease is to be ratified by Parliament, and the provisions of the Government Railways Act are

The principal points on the main line, Moncton being the starting point, are: McGivins Jct., mileage 56.3; Napadogan, mileage 117.4 (d); Edmondston, mileage 250.5 (d); New Brunswick boundary mileage, 256.3; Monk, Que., mileage 354.4 (d); Quebec Bridge, mileage 360.2; Quebec, general shops and terminals; Hervey Jct., mileage 532.9; Fitzpatrick, mileage 566.6 (d); Parent, mileage 705.5 (d); Doucet, mileage 808.5 (d); O'Brien, mileage 905.3 (d); Quebec, Ontario boundary, mileage 956.2; Cochran, mileage 1027.9 (d); Hearst, mileage 1156.9 (d); Grant, mileage 1282.4 (d); Armstrong, mileage 1413.5 (d); Superior Jct., mileage 1546.1; Graham, mileage 1552.5 (d); Redditt, mileage 1675.7 (d); Ontario, Manitoba boundary, mileage 1712.00; Transcona, Man., terminal yards and general shops, mileage 1779.2; Water St., Winnipeg, mile-

NATIONAL TRANSCONTINENTAL  
RAILWAY  
EASTERN DIVISION  
MILEAGE  
BETWEEN PRINCIPAL POINTS

*asbrook*  
Asst to Chief Engineer.

REVISED  
OTTAWA, ONT.  
SEPT 15th 1914

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pany respecting the taking of it over under the terms of the contract. The company filed what Senator Lougheed told the Senate were "omnibus objections" to entering upon this contract, and subsequently the Government decided to undertake the operation of the Eastern Division as part of the Canadian Government Railway's system. An order-in-council providing for this was passed, and upon the G.T.P.R. Co. finally deciding not to take a lease of the line, an official announcement was made. April 30, as follows:

"As the G.T.P.R. Co. has declined to take out a lease, the Government will tomorrow, May 1, take over for operation the National Transcontinental Ry., Eastern Division, from Montreal to Winnipeg. At the same time the Government will also take over and operate the Lake Superior Division of the Grand Trunk Pacific lying between Superior Junction and Port William, including the terminals at the latter place."

Following this, F. P. Gutelius, General

to apply to the branch.

The total mileage of the line from Moncton, N.B., to the west side of Water St., Winnipeg, is 1,804.5, to which is to be added the mileage of the Lake Superior Branch, 190 miles, making a total of 1,994.05 miles of new main line to be operated by the Dominion Government. Of this mileage, 457.7 miles from Moncton, N.B., to St. Jean Chrystome, Que., has been operated by the Government Railways officials since Nov. 22, 1914, and certain other mileages on the line between Quebec and Lake Superior Jct. have been operated by the contractors under a special arrangement with the Railways Department.

In addition to the main line, on which there is a small amount of second track, and a line from Quebec to the site of the Quebec Bridge, together 20.79 miles, there are 423.26 miles of track in yards and sidings.

age 1804.5. The "d" in the brackets signifies divisional points.

Rolling stock is being supplied from the Intercolonial Ry., but the Minister of Railways has power to purchase whatever rolling stock is necessary out of the consolidated funds. A number of locomotives and cars have been sent out from Moncton, for distribution along the line, having been taken across the St. Lawrence River at Quebec by the car ferry Leonard.

The Dominion Government took over last autumn the North Ry.'s charter rights to build a railway from Montreal to the N.T. Ry. at the crossing of the Bell River, Que., paying therefor \$250,000.

Railway track has increased in weight 37% during the last 20 years, and during the same period the unit load hauled has increased, in some instances, over 300%.



## Railway Development.

### Projected Lines, Surveys, Construction, Betterments, Etc.

**Alberta and Great Waterways Ry.**—The construction programme for the year, J. D. McArthur, President, is reported to have in a recent interview, contemplates the completion of grading to Fort McMurray, Alberta, mileage 300 from Carbondale, the point of junction with the Edmonton, Dunvegan and British Columbia Ry. Track has been laid from Carbondale to mileage 135, about 21 miles north of Lac la Biche. Whole grading is expected to be completed to Fort McMurray by the end of the year, it is not expected that the track will reach that place until Mar., 1916. (April, pg. 136.)

**Bassano and Bow Valley Ry.**—We are officially advised that while the contracting firm of Grant Smith and Co. and McDonnell, Calgary, looked into the matter of the construction of this line, there is no authority at all for the press reports stating that they had acquired the charter. (May, pg. 170.)

**Burrard Inlet Tunnel and Bridge Co.**—The directors are taking legal advice as to the situation created by the fact that the legal advisors of two municipalities are of opinion that the bylaws authorizing the raising of funds for the building of the bridge must be re-submitted to the rate-payers, while the legal advisors of the two other municipalities are of the contrary opinion. The municipality of the district of North Vancouver, which has the largest interest, has decided not to pay out any further money on account of the bridge project unless the money bylaws are re-submitted to a vote. (April, pg. 136.)

**Central Canada Ry.**—J. D. McArthur, President, is reported to have said in a recent interview that the construction of the line from McLennan, Alberta, to Peace River, 50 miles, would be proceeded with immediately and completed this year. Grading is completed for about 28 miles, from McLennan, the Junction point with the Edmonton, Dunvegan and British Columbia Ry., and track had been laid to April 20, on about 20 miles. (May, pg. 170.)

**Dominion Atlantic Ry.**—A steel railway bridge on concrete piers was completed recently over the Avon River in Nova Scotia. The Avon flows into Minas Bay, an affluent of the Bay of Fundy, which accounts for the fact that tides in the river reach 35 to 40 ft. The bridge is 1,200 ft. long c. to c. of abutments, with 9 concrete piers all on rock or hardpan, 35 ft. below river bed, except one which is carried on piles. The rock is overlaid with 5 ft. of gravel covered with 15 ft. of shifting sand. The current reaches as high as 8 miles an hour. Foundation work was extremely difficult, and had to be done at low tide—allowing only 3½ hours a day for a shift. The bridge was built in two years by the Nova Scotia Construction Co., Ltd., of Sydney, N.S., with A. S. Kennedy, Construction Superintendent.

**Edmonton, Dunvegan and British Columbia Ry.**—In a recent interview J. D. McArthur is reported to have stated that the head of steel had reached Big Smoky River, mileage 290 from Edmonton, Alberta, and that it is proposed to complete the line to mileage 357, or six miles west of the Spirit River settlement. The projected branch to Grand Prairie district, will leave the main line in the vicinity of the Spirit River settlement, and will be about 60 miles long. The surveys will be rushed to completion, and grading will be done during the year, but it is not expected that track

will be laid until the spring of 1916.

The construction of the Grand Prairie branch presents some difficult features, the principal being the steep declivity on the east bank of the Big Smoky River, and the overcoming of the Birch Hills, which lie between the Big Smoky River and Grand Prairie city. (May, pg. 170.)

**Hardy Bay and Quatsino Sound Ry.**—A press report stated, May 11, that W. E. Cullen, Spokane, Wash., colliery proprietor, and J. F. Twohy, railway contractor, had gone to Hardy Bay, Vancouver Island, to take over some coal properties, and to inspect the route of the projected 17 mile railway to connect Hardy Bay with Coal Harbor, on Quatsino Sound. (Aug., 1909, pg. 573.)

**Intercolonial Ry.**—Tenders were received by the Department of Railways, up to May 28, for building a spur line of 2.3 miles, leaving the main line about 1.8 miles east of Bathurst, N.B. This is the spur for the construction of which \$62,400 was voted at the Dominion Parliament last session. Industrial sidings will be built from the spur to serve the Bathurst Lumber Co., new pulp mill and other mills. (May, pg. 183.)

**Kent Coal and Ry. Co.**—The New Brunswick Legislature has incorporated a company with this title to build a railway from Rexton to Richibucto Head, and from Rexton to Minto or Chipman, crossing the Intercolonial Ry. between Kent Jct. and Adamsville, N.B. (April, pg. 136.)

**Kettle Valley Lines.**—We are officially advised that it is the intention to operate the line between Midway and Merritt, B.C., for the present under the control of the K.R.V. Ry., of which J. J. Warren is President. The service will be operated connecting with the C.P.R. at both ends of the line, and C.P.R. rolling stock will be used.

The track on the section of the line from Osprey Summit to Princeton, B.C., was tied up with the Vancouver, Victoria and Eastern Ry., April 21, and the ballasting on the section was expected to be fully completed May 31. (May, pg. 171.)

**Lake Erie and Northern Ry.**—We have been officially informed that the line is completed from Galt to Brantford, and that grading is completed southerly from Brantford to within a mile of Port Dover, Ont. The bridge at Waterford was expected to be completed by May 31, and the one over the Grand River at Brantford is expected to be completed by July 1. Track has been laid on the southerly section of the line between Waterford and Simcoe, eight miles, and Johnson Bros., the contractors, expect to have the grading and track laying completed by Aug. 30.

In connection with the projected operation of the line by electricity enquiries are being made for electric material and there appears to be no doubt that the line will be electrified.

A proposition has been made by the company to the Brantford City Council for certain running rights over the Grand Valley section of the Brantford Municipal Ry., at Galt, and between Paris and Brantford. The matter came before the City Council, April 27, when representatives of the Board of Trade were invited to confer with the Brantford Railway Commissioners as to the project. It was stated, May 3, that the city might sell the Grand Valley section of the line to the L. E. and N. R. (May, pg. 171.)

**Roberval-Saguenay Ry.**—The following details of this railway, which includes the

line built under the charter of the Ha Ha Bay Ry., are contained in a recent judgment of the Quebec Public Utility Commission:—The main line extends from Bagotville (or St. Alphonse) on the shore of Ha Ha Bay to St. Mathias (or Ha Ha Bay Jct.) on the Quebec and Lake St. John Ry., 19.38 miles. From Laterriere Jct. a branch extends to Laterriere, 6.50 miles, and while construction has been carried out to Portage des Roches, 12 miles from Laterriere Jct., this latter portion has not been opened up to regular trains. From La Brosse Jct. to Chicoutimi West there is a second branch 3.35 miles, operated by electric power. A branch to St. Alexis, one mile, is projected and subsidized by the Provincial Legislature and the Dominion Parliament, but no work has been done on it. (July, 1914, pg. 323.)

**St. John and Quebec Ry.**—The New Brunswick Legislature has extended the time for building the section of the line from Centerville to Grand Falls. Under the original contract the whole line was to be completed by Sept. 30; the new provision authorizes the carrying on of the work without unnecessary delay. The Government in submitting the measure said the line from Centerville to Gagetown was in operation and the 40% of the receipts to which it was entitled under the operating contract had been paid to the province by the Intercolonial Ry.

The act provides among other things that the Government may retain from the sums received out of the sale of bonds, such amounts as may be necessary to meet outstanding claims against the contractors. Acting under this provision the Government is asking that all outstanding claims be submitted for adjustment so that they may be settled out of the money in hand as far as it will permit. (Feb., pg. 57.)

**Taber Transit Co.**—A meeting of shareholders was held May 1 at the Superior Coal Co.'s offices, Taber, Alta., to ratify a bylaw authorizing the issue of bonds for \$12,000 a mile for the projected railway from Taber, to connect with collieries in the vicinity, and to give connection with the C.P.R. Suffield branch and with Bow City, to ratify an agreement with J. F. Kramer and W. E. Bullock for the purchase of certain lands, and for the completion of organization. The notice calling the meeting was signed by J. F. Kramer, one of the provisional directors. (April, 1914, pg. 166.)

**Toronto, Hamilton and Buffalo Ry.**—It is said that nothing further will be done in the matter of the application of the Hamilton, Ont., City Council to the Board of Railway Commissioners for an order compelling the T., H. and B. R. to elevate its line along Hunter St., for some time. A city official is reported to have stated that Canadian Northern Ry. interests are co-operating with the T., H. and B. R. officials, and that a plan will ultimately be submitted for the elevation of tracks, and the entrance of the C.N.R. into Hamilton, which will settle a number of questions that have been under discussion for some considerable time. (April, pg. 137.)

**Railway Lands Patented.**—Letters patent covering Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, were issued in March, as follows:

	Acre.
Calgary and Edmonton Ry. ....	2,724.00
Canadian Northern Ry. ....	800.00
Canadian Pacific Ry. ....	397.51
Edmonton, Dunvegan and British Columbia Ry. ....	108.09
Grand Trunk Pacific Branch Lines Co. ....	30.36
Qu'Appelle, Long Lake and Saskatchewan Rd. and Steamboat Co. ....	1,579.68
Total .....	5,639.64



## Mainly About Railway People.

**Sir Thomas Shaughnessy**, President, C.P.R., sailed on the s.s. Adriatic from New York, May 27, for England.

**G. W. Downing**, a car inspector, I.R.C., was killed at Moncton, N.B., May 11, by being caught between two cars.

**W. Somerville**, ticket agent, G.T.R., Seaforth, Ont., has been appointed Secretary-Treasurer of the Seaforth Collegiate Board.

**G. H. Ham**, of the headquarters staff, C.P.R., returned to Montreal, early in May, after a three months trip along the Pacific coast.

**J. K. L. Ross**, director, C.P.R., and Mrs. Ross have offered their residence, Drumbo, Sydney, N.S., as a convalescent home for wounded soldiers.

**Capt. G. E. B. Begy**, of the 4th Battalion, Canadian Overseas Expeditionary Forces, who is a contractor at St. Catharines, Ont., was wounded in the battle of Langemarck.

**Mrs. Robert Thomson** died at St. John, N.B., May 25. Her husband, who died about seven months ago, was a prominent ship owner, etc., at St. John.

**Dr. H. A. Beatty**, Chief Surgeon, Ontario Division, C.P.R., Toronto, has been elected to the executive of the American Railway Chief Surgeons' Association, for this year.

**Major Jas. Lightfoot**, of the Canadian Overseas Expeditionary Forces, proprietor of Lightfoot Transfer Co., Winnipeg, was wounded in the battle of Langemarck.

**H. J. Somerset**, formerly Manager, Perth Electric Tramways Co., Australia, who died in Toronto, April 11, left an estate of \$46,527 to his widow, also life insurance of \$11,733 in her favor.

**Private A. G. Ingals**, of the Canadian Overseas Expeditionary Forces, who was killed in the battle of Langemarck, was an electrician in the Winnipeg Electric Ry. Co.'s service.

**Lt. S. D. Armour**, of the 72nd Seaforth Highlanders, Vancouver, who was wounded in the battle of Langemarck, is a nephew of Stuart Armour, Manager, C.P.R. Hotel, Lake Louise, Alta.

**Capt. W. C. Cochrane**, who is on Major-General Steele's staff in the 2nd contingent, Canadian Overseas Expeditionary Forces, is a son of Hon. Frank Cochrane, Minister of Railways and Canals.

**M. E. Duncan**, Vice President and General Manager, Canadian Car and Foundry Co., died in Montreal May 23, aged 53, of hemorrhage of the brain.

**Lt.-Col. Gordon Stewart**, Ottawa, who is Major of the Ontario Brigade in the Canadian Overseas Expeditionary Forces, is a dredging contractor and son of Robt. Stewart, ex-M.P. for Ottawa.

**Lt.-Col. J. J. Creelman**, of the Second Field Artillery Brigade, Canadian Overseas Expeditionary Forces, and son of A. R. Creelman, K.C., director, C.P.R., was wounded in the battle of Langemarck.

**B. C. Gesner**, Eastern Sales Agent, Galena Signal Oil Co., Moncton, N.B., was born at Cornwallis, N.S., April 23, 1859, and not in 1850, as stated in Canadian Railway and Marine World for April.

**George Bradshaw**, Safety Engineer, Grand Trunk and Grand Trunk Pacific Railways, read a paper on practical methods in accident prevention, before the Richmond Railroad Club at Richmond, Va., May 10.

**Sir Thomas Tait**, President, Fredericton and Grand Lake Coal and Ry. Co., accompanied by Lady and Miss Tait, returned to Montreal recently from Florida where they spent the winter.

**C. L. Cantley**, Assistant Manager, Nova Scotia Steel and Coal Co., and son of T.

**Cantley**, General Manager, who is with the Canadian expeditionary forces in France, has been appointed a Quartermaster-General.

**W. U. Appleton**, General Master Mechanic, Canadian Government Railways, Moncton, N.B., received some painful cuts and bruises, when his gasoline motor car collided with a freight train on the Montreal Transcontinental Ry., near St. Anselm, Que., at the end of April.

**R. W. Burnett**, who resigned the position of General Master Car Builder, C.P.R., recently, has been staying in Chicago, and is going to take a thorough rest for a time. With Mrs. Burnett, he will make an extended tour through the west, including a visit to the San Francisco exhibition.

**D. F. Burke**, of Port Arthur, Ont., who was one of the promoters of the Port Arthur, Duluth & Western Ry., has been informed that two of his sons, who were in



C. F. Black,  
Attorney, Central Vermont Railway.

the 8th Battalion, Canadian Overseas Expeditionary Forces, are prisoners at Munster, Germany.

**Lieut. McLurg**, formerly Manager, Algoma Central Steamship Co., and latterly Sales Manager, Algoma Steel Corporation, Sault Ste. Marie, Ont., who was with the Canadian Overseas Expeditionary Forces, has been wounded, and is a prisoner in Germany.

**Capt. T. C. Irving, Jr.**, Vice President, Robt. W. Hunt & Co., Ltd., Bureau of Inspection, etc., Montreal and Toronto, who is in command of No. 1 company, Field Engineers, in the Canadian Overseas Expeditionary Forces, cabled his father after the battle of Langemarck that he was well.

**Major D. Rykert McCuaig**, son of C. J. McCuaig, President, Sherbrooke Railway & Power Co., who was in the 13th Battalion, Canadian Overseas Expeditionary Forces, and was wounded at the battle of Langemarck, where he fought most heroically, is a prisoner in a German hospital.

**W. P. Hinton**, Assistant Passenger Traffic Manager, G.T.R. and G.T.P.R., returned to Montreal recently after a 12,000 mile trip over the company's rail and steamship lines. While in San Francisco he represented the companies at the American Association of Passenger Traffic Officers convention.

**A. L. Hertzberg**, M. Can. Soc. C. E., Division Engineer, Ontario Division, C. P. R., Toronto, received news early in May, that his son, Lieut. H. F. H. Hertzberg, of the Canadian Engineers, had been wounded at Langemarck, and was in the military hospital at Colchester, Eng. A younger son is also at the front.

**T. Mullins**, whose appointment as City Passenger Agent, C.P.R., Ottawa, was announced in our last issue, was entertained to dinner by his associates at Toronto, May 1, and presented with a gold watch and chain. The surplus amount received from subscribers was sent to the cigarette and tobacco fund for soldiers at the front.

**H. K. Wicksteed**, M. Can. Soc. C. E., Chief Engineer of Surveys, Mackenzie, Mann & Co., Ltd., who spent three months in Venezuela last winter in connection with a coal mining and railway construction proposition, left Toronto again for there May 18, accompanied by R. H. M. Temple, Assistant Solicitor, Canadian Northern Ry.

**Arthur Walsh**, who retired recently as agent C. P. R. Telegraphs, Montreal, was appointed to that position on the opening of the office in Sept. 1886, but had been in telegraph service with the Montreal Telegraph Co., the Western Union and the Great North Western Telegraph Cos. for several years prior to that date.

**Col. H. S. Greenwood**, formerly Assistant Chief Engineer, Mackenzie, Mann & Co., Ltd., Toronto, has been in London, Eng., for some time, serving as a major on the Royal Engineers staff. He is especially engaged in railway work for the War Office and will probably go to the continent in the near future.

**Lt.-Col. W. S. Buell**, of Brockville, Ont., who was at one time interested in the Brockville Navigation Co., was wounded in the shoulder by shrapnel while leading the 4th Battalion, Canadian Overseas Expeditionary Forces at the battle of Langemarck. He is in a hospital in London, Eng., and is not expected to be able to return to duty for two or three months.

**Lieut. H. F. H. Hertzberg**, of the Second Field Company, Canadian Engineers, son of A. L. Hertzberg, Division Engineer, Ontario Division, C.P.R., who was wounded at the battle of Langemarck, is in a hospital at Colchester, Eng., and is reported to be convalescing satisfactorily. His brother, O. P. Hertzberg, is at the front in the 3rd Toronto Battalion.

**C. L. Conacher**, formerly Traffic Manager, Cambrian Railways, Wales, who visited Canada last summer, has been serving as a railway transport officer in London, Eng., on the staff of the War Office (Director of Movements) with the rank of staff captain, since Oct. 1914. He hopes when released from his duties after the war, to revisit Canada and renew the connections he formed here.

**D. R. MacBain**, Superintendent of Motive Power, New York Central Rd., west of Buffalo, N. Y., Cleveland, Ohio, has been appointed by the President of the United States, a member of the board of the National jury of awards at the Panama-Pacific Exposition. He was at one time Master Mechanic, Michigan Central Rd., at St. Thomas, Ont.

**L. M. Miller**, of St. Thomas, Ont., who has been appointed Assistant to the Chief Medical Officer, Ontario Workmen's Compensation Board, Toronto, has been Super-



President of the Railway Hospital Association at St. Thomas, Ont., in charge of first aid work, and has also been acting for the Michigan Central Rd. in connection with the settlement of accident claims.

The will of the late Lt.-Col. Lacey R. Johnson, General Welfare Agent, C.P.R., disposes of his estate to his wife, with the furniture of his house for the use of his unmarried daughters. His model locomotive is left one son, and his gold watch and chain to another. On his wife's death, the property is to be divided among four daughters and two sons, the two unmarried daughters to receive double portions.

G. McLaren Brown, European Manager, C.P.R., and Mrs. Brown, W. Phillips, European Railway and Steamship Manager, Canadian Northern Ry., and Mrs. Phillips, and Hugh A. Allan, of the Allan Line Steamship Co., and Mrs. Allan, attended a reception given by the Mayor and Mayoress of Folkestone, Eng., Apr. 27, to Canadian and British officers stationed at Folkestone and Shorncliffe.

G. McLaren Brown, European Manager, C.P.R., in speaking at the April meeting of Canada Lodge, A. F. and A. M., in London, Eng., made a glowing and sympathetic allusion to the heroism of the Canadians in the recent actions in Belgium, reminding the brethren that only a few months ago several of those who have since fallen had been the guests of the lodge on their arrival from Canada.

O. S. Cockey, General Agent, G.T.R. New York, N.Y., died at White Sulphur Springs, Va., May 9, aged 60. He entered railway service with the Pennsylvania Rd. at Pittsburg, Pa., afterwards going to the Great Western Ry. of Canada, which was taken over by the G.T.R. He was appointed Commercial Agent, G.T.R., at New York, Nov. 1, 1891, and General Agent, May 1, 1894, holding the latter position till his death.

Sir Thomas Shaughnessy, President, C.P.R., has returned to Montreal from a visit to the Panama Exhibition, at San Francisco, and other California points, travelling home by way of Vancouver. He was accompanied by Lady and Miss Shaughnessy. At Vancouver he was met by R. B. Angus, one of the directors, who was accompanied by his son-in-law, C. B. Martin and Mrs. Martin, and the two parties returned to Montreal together.

William Tansley, who has been appointed Assistant Superintendent, District 5, Eastern Division, C.P.R., Smiths Falls, Ont., was born in Shelburne, Ont., Dec. 27, 1872, and entered C.P.R. service in 1889, since when he has been, to 1900, operator and agent at various points on the Ontario Division; 1900 to 1907, dispatcher, Toronto; 1907 to 1912, Chief Dispatcher, Toronto; 1912 to 1914, Assistant Superintendent, Havelock, Ont.; 1914 to May 18, 1915, Assistant Superintendent, District 3, Ontario Division, Toronto.

Joseph Rielle, who died at Montreal, May 9, was born at Laprairie, Que., in 1833, and in 1854 became assistant to the then Assistant Engineer, Montreal Harbor Commissioners, and subsequently was appointed Assistant Engineer. He was a member of the Canadian Society of Civil Engineers from 1887, and in 1904, on the completion of 50 years as a land surveyor, the Society presented him with a testimonial. He was at one time Vice President of the Pontiac and Pacific Jct. Ry.

J. A. L. Waddell, D. Sc. (McGill); L.L.D.; M. Can. Soc. C. E.; M. Am. Soc. C. E.; M. Inst. C. E.; M. S. C. E., France, of Kansas City, Mo., who is a Canadian by birth and who has done considerable engineering work in Canada, one of his latest engagements being through the former firm of Waddell & Harrington, now dissolved, in connection

with bridge construction on the Canadian Northern Pacific Ry., has been given the degree of hakushi (doctor of engineering) by the Japanese Department of Education.

Miles Hoar, who died recently at Sackville, N.B., aged 82, was an interesting link with the old stage coach days. At the age of 19 he was working on the European and North American Ry. survey, and in the following year commenced driving a stage coach between St. John and Moncton, N.B., and later drove between Harvey and St. John, and still later between Moncton and Amherst. On the completion of the railway there, he engaged in the mail service on the railway, and was later employed on a section at Sackville, subsequently being appointed foreman, where he remained for 35 years.

J. F. Richardson, who was appointed Superintendent of Telegraphs, Saskatchewan Division, C.P.R., Moose Jaw, recently, in reported to have resigned and to have left Moose Jaw for Montreal. It is stated that he has been succeeded by D. Coons, who



W. J. Pickrell,  
Master Mechanic, Ontario Division, Canadian  
Pacific Railway.

had been transferred from that position to Calgary, recently, in a similar capacity for the Alberta Division, that J. D. L. Howard heretofore Inspector of Telegraphs, Medicine Hat, has been appointed Superintendent of Telegraphs, Alberta Division, Calgary, and that H. H. Goodfellow, heretofore Assistant Chief Operator at Vancouver, B.C., has been appointed Inspector of Telegraphs at Medicine Hat.

Lance Corporal C. A. McCowan, 13th Battalion, Canadian Scottish, son of A. McCowan, General Car Foreman, Canadian Northern Ry., Winnipeg, who was born in Montreal 22 years ago, was shot in the neck at Neuve Chapelle, Mar. 11, about 9 a.m. He received first aid but could not be removed from the trenches until after dark. While he was being removed with other wounded, the Germans attacked them with machine guns, one of the stretcher bearers who was accompanying McCowan being shot through the wrist. McCowan wrote his father from Shorncliffe early in May

saying that he hoped to be able to return to the front shortly.

J. Billingham, who was appointed Superintendent of Motive Power, Grand Trunk Pacific Ry., Transcona, Man., in August, 1914, has resigned. Prior to his departure for his home in Schenectady, N.Y., he was presented with a case of silver and an address by the local staff. He was born in England, and served an apprenticeship with the London and North Western Ry. there. On going to the United States he was appointed Master Mechanic, Baltimore and Ohio Rd., and was subsequently European Manager, Galena-Signal Oil Co., and later returned to the U. S. as Superintendent of Works, American Locomotive Co., Schenectady, N.Y.

John H. Mills, whose appointment as Master Mechanic, Lake Superior Division, C. P. R., North Bay, Ont., was announced in our last issue, was born at Sherbrooke, Que., Apr. 23, 1865, and entered C. P. R. service, May 1, 1889, since when he has been, to Dec. 20, 1889, in Bridge and Building Department, Sherbrooke, Que.; Feb. 27, 1890 to Jan. 3, 1898, fireman, Farnham, Que.; Jan. 3, 1898 to Jan. 23, 1902, locomotive driver, Farnham, Que.; Jan. 23, 1902 to Apr. 1, 1903, delivering new locomotives from main shops to destination; Apr. 1, 1903 to Dec. 31, 1908, District Master Mechanic, Montreal; Jan. 1, 1909 to Apr. 14, 1915, Master Mechanic, Ontario Division, Toronto.

A. L. Sauve, whose appointment as City Ticket Agent, C.P.R., Ottawa, Ont., was announced in our last issue, was born at Portage du Fort, Que., Oct. 2, 1888, and entered C.P.R. service, July 6, 1906, since when he has been, to Dec. 11, 1907, stenographer and ticket clerk, Ottawa, Ont.; Dec. 11, 1907 to June 5, 1908, stenographer, General Passenger Department, Montreal; June 5, 1908 to May 1, 1909, ticket agent, s.s. Empress of Britain; May 1, to Dec. 10, 1909, City Ticket Agent, Quebec, Que.; Dec. 10, 1909 to Oct. 4, 1911, chief clerk, City Ticket Office, Ottawa, Ont.; Oct. 4, 1911, to Apr. 14, 1915, City Passenger Agent, Detroit, Mich.

F. M. Rutter, A.M.Can.Soc.C.E., who has been appointed Assistant Superintendent, District 3, Ontario Division, C.P.R., Toronto, was born there, Dec. 26, 1880, and educated at Upper Canada College and Toronto University. He entered C.P.R. service in April 1902, since when he has been, to 1904, chain man and rod man on location surveys and construction, Toronto-Sudbury line; 1906 to 1907, transit man, Maintenance of Way Department, Montreal; 1907 to 1911, Resident Engineer, Maintenance of Way, Woodstock, N.B.; 1911 to July 1913, Resident Engineer, Maintenance of Way, Toronto; July 1913 to Apr. 30, 1915, Assistant Division Engineer, Maintenance of Way, Eastern Division, Montreal.

The Michigan Central Rd. annual report for the past fiscal year contains the following paragraph: "Thomas Eedson, retired Auditor of Freight Accounts and Freight Claim Agent, died in Detroit, Nov. 1, 1914, at the age of 73. He came into the service of this company in 1883 from a position with the Canada Southern Ry. Co., and remained in the accounting department until his retirement in 1912. He also held a similar position with the Toronto, Hamilton & Buffalo Ry. Co. from the date of its organization to his death. He was an industrious man, of studious and inquiring mind, and rendered good service in his own department as well as in the organization and conduct of the Freight Claim Association and the Association of American Railway Accounting Officers."

M. A. Fullington, A.M.Can.Soc.C.E., who has been appointed Superintendent, District



3, Eastern Division, C.P.R., Montreal, was born at Johnson, Vt., May 12, 1880, and entered C.P.R. service, Oct. 1904, since when he has been, to Jan. 1905, rodman, Toronto; Jan. to Oct. 1905, transitman, London, Ont.; Oct. 1905 to Apr. 1907, Assistant Engineer, Toronto Terminals; Apr. 1907 to Jan. 1912, Resident Engineer, Districts 1 and 4, Ontario Division, Toronto; Jan. 1912 to Jan. 1913, Engineer, Dominion Atlantic Ry., Kentville, N.S.; Jan. to July 1913, Assistant Division Engineer, C.P.R., Montreal; July to Sept. 1913, Assistant Engineer, Eastern Lines, C.P.R., Montreal; Sept. 1913 to May 10, 1915, Assistant Superintendent, District 4, Eastern Division, C.P.R., Ottawa, Ont.

**W. H. Winterrowd**, who has been appointed Assistant to Chief Mechanical Engineer, C. P. R., Montreal, was born at Hope, Indiana, Apr. 2, 1884, and educated at Shelbyville, Ind., and Purdue University, whence he graduated in 1907. He entered railway service in 1905, since when he has been, to 1906, blacksmith helper, Lake Erie and Western Ry., Lima, Ohio; 1906 to 1907, air brake and care repair man, Pennsylvania Rd., Western Lines, Dennison, Ohio; 1907 to 1908, special apprentice, Lake Shore and Michigan Southern Ry., Elkhart, Ind.; 1908 to 1909, Roundhouse Foreman, Lake Erie, Alliance and Wheeling Ry., Alliance, Ohio; 1909 to 1910, Night Roundhouse Foreman, Lake Shore and Michigan Southern Ry., Youngstown, Ohio; 1910, Roundhouse Foreman, same road, Cleveland, Ohio; 1910 to Sept. 1912, Assistant to Mechanical Engineer, same road, Cleveland, Ohio; Sept. 1912 to May 1915, Mechanical Engineer, Angus Shops, C. P. R., Montreal.

**R. W. McCormick**, who died at Farnham, Que., Apr. 23, was born at Liverpool, Eng., Jan. 8, 1867, and entered railway service in 1879, as operator with the old Canada Central Ry., at Sand Point, Ont., and acted, successively, as operator and agent, at Renfrew, Smiths Falls and Carleton Jct., Ont. He was subsequently, from Oct. 1896 to Feb. 1897, relieving train dispatcher, C. P. R., Ottawa; Feb. 1897 to Oct. 1901, dispatcher, C. P. R., Ottawa; Dec. 1901 to Oct. 1903, Chief Dispatcher, C. P. R., Ottawa; Oct. 1903 to Aug. 1906, Trainmaster C. P. R., Ottawa; Aug. 1906 to Nov. 1907, Assistant Superintendent, C. P. R., successively, at Smiths Falls, and Montreal; Nov. 1907 to Feb. 1911, Assistant Superintendent, District 4, Eastern Division, C. P. R., Ottawa; Feb. 1911 to Sept. 1913, Assistant Superintendent, District 1, Eastern Division, C. P. R., Farnham, Que.; Sept. 1913 to June 1914, Superintendent, District 3, Eastern Division, C. P. R., Montreal; June 1914 to Apr. 23, 1915, Superintendent, District 1, Eastern Division, C. P. R., Farnham, Que.

**William John Pickrell**, who has been appointed Master Mechanic, Ontario Division, C.P.R., Toronto, was born at London, Ont., Sept. 15, 1880, and entered C.P.R. service, Jan. 3, 1900, since when he has been, to July 31, 1901, wiper; July 31, 1901 to Oct. 31, 1904, fireman; Nov. 1, 1904 to July 31, 1906, travelling fireman; Aug. 1, 1907 to Apr. 14, 1908, assistant road fireman; Apr. 15, 1908 to May 9, 1910, locomotive driver; May 10 to June 30, 1910, rule examiner; July 1 to Oct. 14, 1910, locomotive driver; Oct. 15 to Dec. 15, 1910, rule examiner; Dec. 16, 1910 to Apr. 8, 1912, locomotive driver; Apr. 9 to Dec. 1, 1912, District Master Mechanic; Dec. 2 to Dec. 8, 1912, locomotive driver; Dec. 9, 1912 to July 28, 1913, District Master Mechanic, Districts 3 and 4, Ontario Division; July 29 to Aug. 17, 1913, Assistant Superintendent, District 3, Ontario Division; Aug. 18 to Oct. 31, 1913, District Master Mechanic, Districts 3 and 4, Ontario Division, all at Toronto; Nov. 1, 1913 to Apr. 23, 1915, Assistant Superintendent,

District 2, Atlantic Division, Aroostook Jct., N.B.

**Charles W. Van Buren**, whose appointment as General Master Car Builder, C. P. R., Montreal, was announced in our last issue, was born in Rensselaer County, N. Y., Oct. 15, 1867, and entered railway service in March 1889, since when he has been to Nov. 1891, carpenter, New York Central Shops, West Albany, N. Y.; Nov. 1891 to Sept. 1, 1893, assistant foreman; Sept. 1, 1893 to Sept. 1, 1896, in charge of Car Department work, Adirondack Division, same road, Herkimer, N. Y.; Sept. 1, 1896 to July 16, 1905, Car Foreman, Adirondack Division, and Mohawk Division, New York Central and West Shore Rds.; July 16, 1905 to July 1, 1906, General Car Inspector, Eastern Lines, C.P.R., Montreal; July 1, 1906 to July 1, 1909, Divisional Car Foreman, Eastern Division, C.P.R., Montreal; July 1, 1909, to May 31, 1911, Master Car Builder, Eastern Lines, C. P. R., Montreal; June 1, 1911 to Jan. 1, 1915, Assistant to General Manager, Union Stock Yard and Transit Co., Chicago, Ill.; Jan. 1 to April 1915, General Foreman, Car Shops, Milwaukee Refrigerator Transit and Car Co., Milwaukee, Wis.

**Walter C. E. Moberly**, who died at Vancouver, B.C., May 14, aged 83, was born at Steepleorton, Oxfordshire, Eng., and educated at Barrie, Ont. He entered railway service with the Ontario, Simcoe and Huron Ry., and from 1855 to 1857 was engaged in exploring the country from Lake Simcoe to Lake Huron and north to Lake Superior. In the following year he went to British Columbia under the British Public Works Department, and arranged the site of the capital of British Columbia, Queensborough, now New Westminster. He was in 1862-63 engaged in the construction of the Yale-Cariboo wagon road, and in 1864 was appointed Assistant Surveyor General for the colony, and explored the south and south east, when he discovered the Eagle Pass, which was utilized in later years for the C.P.R. route. In 1871, the Dominion Government having decided on the building of a transcontinental railway, he was sent for, and his knowledge utilized, he being appointed engineer in charge of surveyors from the west end of Eagle Pass, easterly through Gold, Selkirk and Rocky ranges of mountains, to Mount Murchison. On leaving Government service, he was one of the promoters, and afterwards Chief Engineer of the Manitoba Southwestern Ry., now part of the C.P.R.

**James Kerr McNeillie**, who has been appointed General Superintendent, Intercolonial Ry., Prince Edward Island Ry. and National Transcontinental Ry. east of Quebec, with office at Moncton, N.B., was born at Toronto, Feb. 23, 1874, and entered railway service in May, 1890, since when he has been, to Nov., 1891, call boy and apprentice, G.T.R., Lindsay, Ont.; Nov., 1891, to Sept. 1896, apprentice, locomotive fitter and machinist, G.T.R., Point St. Charles, Que.; Sept. 1, 1896, to Nov., 1899, trainmaster's clerk and chief clerk, Superintendent's office, C.P.R., Farnham, Que.; Nov., 1899, to June, 1902, clerk, and chief clerk, General Superintendent's office, C.P.R., Winnipeg; June, 1902, to Feb., 1903, Car Service Agent, C.P.R., Winnipeg; Mar., 1903, to Oct., 1907, Car Service Agent in charge of distribution of passenger equipment, C. P. R., Montreal, Que.; 1907, to July, 1908, Assistant Superintendent of Terminals, C. P. R., Toronto; July, 1908, to Feb., 1909, Superintendent, District 1, Ontario Division, C.P.R., Toronto; Feb., 1909, to Mar., 1911, Superintendent, District 2, Ontario Division, C.P.R., London; Mar., 1911, to Feb., 1913, Superintendent, District 1, Eastern Division, C.P.R., Farnham, Que.; Feb., 1913, to June,

1914, Superintendent, District 2 (Montreal Terminals), Eastern Division, C.P.R., Montreal; June, 1914, to May, 1915, Superintendent, District 3, Eastern Division, C.P.R., Montreal.

**F. P. Brady**, who has been appointed General Superintendent, National Transcontinental Ry. between Quebec and Winnipeg, and of the Lake Superior Branch, Grand Trunk Pacific Ry., which are being operated as part of the Canadian Government Railways, with office at Cochrane, Ont., was born at Haverhill, N.H., June 22, 1853, and entered railway service 1869, as station baggagemaster Passumpsic Ry., since which he has been consecutively: 1873 to 1880, train dispatcher Northern Rd., at Concord, N.H.; 1880 to 1888, Chief Train Dispatcher Southeastern Ry., at Richford, Vt.; 1888 to 1889, Trainmaster C.P.R.; 1889 to 1898, Assistant Superintendent same road; 1898 to May, 1901, Superintendent same road at Smith's Falls, Ont.; May, 1901, to Sept., 1902, Superintendent districts 10 and 11 same road at Toronto; Sept., 1902, to May, 1903, Superintendent district 19 same road at Fort William, Ont.; June 1, 1903, to Feb., 1904, Assistant General Superintendent Central Division, Winnipeg, Man.; Feb., 1904, to Sept. 16, 1908, General Superintendent Lake Superior Division, C.P.R., North Bay, Ont.; May 1, 1908, to June, 1909, Member of the Canadian Government Railways Board of Management; June, 1909, to June, 1913, also General Superintendent, Canadian Government Railways, Moncton, N.B.; June, 1913, on the abolition of the Canadian Government Railways Managing Board, to May, 1915, General Superintendent, Canadian Government Railways, Moncton, N.B.

### Railway Taxation in Alberta.

The Minister of Railways informed the Alberta Legislature recently that there had been received from the railway companies in the Province \$635,114.83 on account of taxation on lines, from 1906 to 1914, both years inclusive; the annual amount received being \$68,490.51 a year from 1906 to 1910, inclusive, and \$74,165.57 a year from 1911 to 1914, inclusive. Taxes were levied on the following lines: Calgary-Strathcona line, 190.6 miles; Calgary-McLeod line, 105.2 miles; Dunmore Jct.-Summit Lake line, 210.9 miles; total, 506.7 miles; amount of taxes \$60,730 yearly, during the whole period. Lethbridge-Coutts line, 65.3 miles, amount of taxes, \$7,760.51 yearly to 1910; from 1911 to 1914, inclusive, to the Lethbridge-Coutts line, there has been added the Sterling-Cardston line, 46.8 miles, making 112.1 miles, on which the taxation received was \$13,435.57 a year. Taxation is in arrears as follows:—C.P.R. Lacombe branch, 49.6 miles, \$5,944.72 a year for 1912, 1913 and 1914; C.P.R. Wetaskiwin branch, 51 miles, \$6,112.52 a year, for 1912, 1913 and 1914; Canadian Northern Ry., Lloydminster to Edmonton, 169 miles, \$20,255.22 a year, for 1913 and 1914; Edmonton, Yukon and Pacific Ry. (C.P.R.), from Edmonton to Strathcona, 7.23 miles, \$866.54 a year for 1913 and 1914.

**German Bridge Dynamiter.**—The U. S. Federal Court at Boston, Mass., May 12, refused a writ of habeas corpus to Werner Horn, holding that his attempt to destroy the C. P. R. railway bridge at the New Brunswick-Maine International Boundary, was not an act of war. The court also held that Horn's removal from the State of Maine to Boston, was not illegal. The charges which Horn has now to meet are for violation of the interstate regulations respecting the carrying of explosives.



## Arbitration Award in Enginemen's Wage Controversy.

The board of arbitration appointed in the United States under the Newlands law, to settle the controversy between the western railways and their enginemen for increases in wages and changes in service rules, filed its award in the U. S. district court at Chicago, Apr. 30. Slight increases in pay were allowed, and a number of service rules altered, but considerably different from the form submitted by the men. The board of arbitration consisted of J. C. Pritchard, Asheville, N.C., former judge of the U. S. circuit court, chairman; C. Nagel, St. Louis, former Secretary of Commerce and Labor; H. E. Byram, Vice-President, Chicago, Burlington and Quincy Rd.; W. L. Park, Vice-President, Illinois Central Rd.; F. A. Burgess, Assistant Grand Chief of the Brotherhood of Locomotive Engineers, and T. Shea, Assistant President of the Brotherhood of Locomotive Firemen and Enginemen. The award was signed by the first four members, but Messrs. Burgess and Shea presented a minority report protesting against the award as unfair and unsatisfactory. The chairman filed a memorandum stating that while all the awards were not equitable in his estimation, in the main they were fair. Messrs. Byram and Park also filed a statement that their signatures did not imply approval of the principle or in detail, stating that the agreement under which the arbitration was held gave no latitude for the adjustment of unequal conditions.

The demands of the enginemen were comprised in 16 articles, which were submitted to the board. The railways contended that if these were allowed, they would have involved a payroll increase of \$41,000,000 a year, or 51%. The following are summaries of the awards:

**Basis of Day's Work and Overtime.**—In passenger service, the minimum rate for locomotive drivers shall be \$4.30, and for firemen, \$2.50, 100 miles or less, or 6 hours 40 mins. constituting a minimum day's work, with mileage in excess of 100 pro rata. On short run lines, less than 80 miles, overtime shall be paid for all time actually on duty or held for duty in excess of 8 hours, within 12 consecutive hours. All other passenger overtime shall be computed on a 15 m.p.h. basis, at the rate of 75 and 45 cts. an hour for locomotive drivers and firemen respectively. In freight service the rate shall be according to the class of locomotive as in article 2, for 10 hours or less, with mileage in excess of 100 pro rata, with overtime on a 10 m.p.h. basis and paid pro rata on the minute basis. When performing combination road service, the rate of pay will conform to each class of service, and when two or more locomotives of different weight are used during a trip or a day's work, the highest rate applicable to any locomotive shall be paid. In the article submitted by the men, passenger service was to be paid on the basis of 5 hours or less constituting a day's work, with overtime at 20 m.p.h. In all other classes of service, overtime should be computed at 10 m.p.h. and paid for at 15 m.p.h.

**Rates of Pay.**—In passenger service, the minimum rate of wages shall vary for locomotive drivers and firemen respectively from \$4.30 and \$2.50 for locomotives weighing less than 80,000 lbs. on the drivers, to \$5 and \$4 on Mallet locomotives, regardless of weight on drivers, these rates for firemen applying on a coal basis with a slight reduction in most cases of oil burners. Similarly in freight service, they shall vary from \$4.75 and \$2.75 per day on locomotives weighing 80,000 lbs. on the drivers, to \$6.50 and \$4.25 on Mallet locomotives weighing 275,000 lbs. or over on drivers, with the

firemen's differential on oil locomotives. Through freight rates will apply on all work, wreck, pusher or helper, mine runs, circus trains and milk trains according to class of locomotive, with overtime on the minute basis. Belt line or transfer service is recognized as different from switching, but as conditions vary, the adjustment of compensation is left for local arrangements between the managements and the men. No change is made in the territory where a wage differential exists because of gradients, and the railways subject to the schedules in effect Oct. 10, 1913, shall maintain this differential in addition to the award herein given. Locomotive drivers and firemen shall have preference in the selection of operators where electric operation is subject to steam, but this shall not displace men appointed prior to May 1, 1915. As the conditions of electric operation are new, no uniform rules can be adopted, but the minimum rates awarded in the foregoing are made to apply, but the mileage to be covered and hours of service are to be the same as now existing on the several lines, this to be without prejudice to existing agreements.

**Local or Way Freight.**—A minimum of 30 cts. per 100 miles is to be added to through freight rates for local service, with mileage over 100 pro rata.

**Switching Service.**—The minimum rate of wages per 10 hours or less, with overtime pro rata, for locomotives under and over 140,000 lbs. respectively on the drivers, shall be for locomotive drivers, \$4.25 and \$4.40, and firemen, \$2.70 and \$2.75; similarly with Mallet locomotives under and over 275,000 lbs., \$5.15 and \$5.40, and \$4 and \$4 respectively. The time to begin is when required to report for duty, and to end when the locomotive is placed on the designated track, or the enginemen are released, exclusive of meal time, which shall be between 11.30 a.m. and 1 p.m., or 11.30 p.m. and 1 a.m. If required to work during meal hour, it shall be paid for in addition to the minimum day, and 30 mins. shall be allowed under pay for meals.

**Beginning and Ending of Day.**—In all classes of road service, the enginemen's time will commence when they are required to report for duty, and shall terminate when the locomotive is placed on the designated track or relieved by the hostler at the terminal.

**Terminal Delay.**—Pay shall begin at the time enginemen are required to report for duty. The final terminal delay in freight service shall be computed from the time the locomotive reaches the designated main track switch connected with the yard track, and in passenger service, from the time the train reaches the terminal station, and after the lapse of 30 mins. will be paid for the full delay at the end of the trip at the overtime rate on the minute basis, except when road overtime has commenced, when terminal overtime shall not apply.

**Automatic Release and Tie-up.**—Enginemen tied up under the law will be paid continuous time from the initial point to the tie-up point, and when resuming duty on a continuous trip, they shall be paid from the tie-up point to the terminal: 50 miles, or 5 hours or less, 50 miles pay; up to 100 miles or 10 hours, 100 miles pay; over 100 miles or 10 hours at schedule rates.

**Held Away from Home Terminals.**—Enginemen in pool freight or unassigned service at other than home terminal, will be paid continuous time after 22 hours from previous release at the rate paid for last service. If held 14 hours after the first 32 hour period, pay to be continuous for the next 10 hours, or until the end of the 24

hour period, and similarly for each 24 hour period thereafter. If called for duty after pay begins the time will be continuous.

**Deadheading.**—On company's business on passenger trains, per mile, locomotive drivers and firemen, respectively 4.3 and 2.5 cts., and on other trains, 4.75 and 2.75 cts., provided that a minimum day is paid for.

**Hostlers.**—Minimum pay, 12 hours or less, \$4.20 a day, overtime pro rata. Enginemen to be given preference in these positions. Other locomotive house employees handling locomotives 25% of time, to be paid \$3 for 12 hours or less, overtime pro rata.

**Efficiency Tests.**—Value recognized, but must be conducted under conditions not hazardous to employees.

**Assistance for Firemen.**—Coal must be shovelled forward at specified points or by men on tender for that purpose, so that it can be reached by fireman from the locomotive deck. Coal of proper size to be used.

**Two Firemen.**—When two firemen are deemed necessary on locomotives of over 200,000 lbs. on the drivers, committees will discuss the matter with the proper officials, and in the event of failure of a settlement, to be referred to a committee of five, two appointed by the railway, two by the committee, and one by the four assembled. Rulings for the selection of the fifth man in event of dispute are laid down.

**Miscellaneous.**—Firemen shall be relieved of cleaning all locomotives. Enginemen having to set up wedges, fill grease cups, clean headlights and place supplies on locomotives, shall be relieved of this work where competent locomotive house forces are maintained.

**Official Record of Weight on Drivers.**—Each railway shall keep bulletins at terminals showing weights on drivers of all locomotives in service.

**Throwing Switches and Flagging.**—No general rules formulated owing to complexity of the service and the variety of such rules.

## Refund of Unused Railway Tickets.

The Board of Railway Commissioners passed general order 143, April 29, as follows:

Complaints having been made to the Board, and its appearing that considerable inconvenience and annoyance have been caused the public by delays on the part of railway companies in making repayment to ticket holders, as required under the Passenger Tickets Act, R.S.C. 1906, chap. 38, it is ordered that every railway company repay to every holder of a ticket over its railway, within 30 days from demand in the case of a single line ticket, and within 60 days from demand in the case of a joint ticket, the cost of the said ticket if unused in whole or in part, less the regular fare for the distance for which such ticket may have been used. That every such railway company failing to comply with the foregoing regulation be liable to a penalty not exceeding \$25 for every such failure.

**Railway Stores, Limited**, has been incorporated under the Dominion Companies Act, with a capital of \$20,000 and office at Ottawa, Ont., with very extensive powers, but primarily "to import, export, manufacture, buy, sell and deal in goods, wares and merchandise." It also has authority to build or acquire wharves, railway sidings, electric power plants, or anything else which may be considered necessary for the purposes of its business. The provisional directors are: J. Milk, H. E. White, P. McLaren, J. F. Has-kin, A. Gamble, C. W. Leach, R. J. Willoughby, G. A. Owens, W. L. Best, Ottawa.



## Rates on High Explosives to Grand Trunk Railway Stations.

The Interstate Commerce Commission having had before it the question of rates on high explosives to G.T.R. stations, the following report, prepared by Commissioner Harlan, was adopted under date of April 12:—

Without encumbering this report with dates, figures, rate tables, and other unnecessary details, it will suffice to say that it appears from the testimony adduced of record that in the undeveloped districts of Michigan farmers and others make quite a general use of dynamite in clearing their lands and for other purposes; that there is a substantial movement of high explosives to those regions from Baltimore, Wilmington, and Philadelphia; that the usual route to G.T.R. points in Michigan is by various lines to Buffalo, thence through Canada over the rails of the Canadian member of the G.T. system, namely, the G.T.R. of Canada, and thence to destination of the rails of the G.T. Western Ry., the domestic member of that system; and that for a number of years both the Canadian and the domestic members of the G.T. system have joined with the lines east of Buffalo in maintaining through routes and joint rates for the carriage of high explosives from the points of origin just mentioned to the destinations in question.

In the tariffs under suspension, filed by the respondents (the Philadelphia and Reading Ry.) at the request of the G.T. system, it is proposed to cancel these joint through rates and apply the intermediate rates to the traffic, thus materially increasing the cost of the through carriage, particularly on less than carload shipments. From Philadelphia to Caseville, for example, the present less than carload rate of \$1.32 is raised to \$1.76, an increase of 44 cts. per 100 lbs. To all points the increase proposed on less than carload traffic is substantial. The carload rate between the points last mentioned is raised from 66 to 88 cts., an increase of 22 cts. per 100 lbs. The proposed carload rates to other points are increased in the same general proportion.

The higher charges that will apply, if the tariffs in question are permitted to become effective, have not been justified of record by the respondents, and no substantial effort to do so was made by them so far as their mere reasonableness is concerned. The protestants, on the other hand, offered testimony tending to show that the withdrawal of the present joint rates would practically defeat the movement of high explosives to the destinations in question because the small jobbers in that territory could not handle these articles in carload lots, and the intermediate rates and the increased minimum charges on less than carload shipments, that would be applicable if the joint rates are canceled, would so increase the cost of the explosives as to put them beyond the reach of the farmers and others who use them in small quantities.

The justification offered by the carriers for the withdrawal of the joint rates rests chiefly on the assertion that it is against the policy of the G.T.R. of Canada to maintain joint through rates on high explosives. This statement was definitely made of record and upon the argument, and yet the evidence apparently shows that the Canadian member of the G.T. system for many years has participated in such rates and in recent years, in conjunction with its connections, has moved large quantities of high explosives over its rails under joint rates. It is stated that the existence of such rates was the result of an inadvertence on the part of the domestic member of that system, but if so, the inadvertence appears

to have been consistently observed through a period of years while the traffic in these commodities was moving over its rails in appreciable volume. It appears, however, that under the Canadian act respecting railways, carriers are expressly relieved from any public obligation to carry high explosives; and that act is appealed to as the basis of the policy now asserted by the G.T.R. of Canada of not joining in through rates on such commodities. We do not understand, however, that it now refuses, or proposes in the future to refuse, to carry high explosives in Canada on the local rates established by it for that traffic.

A sharp issue is made on behalf of the G.T.R. of Canada, the Canadian member of the G.T. system, as to the legal power of this Commission to require it to continue to participate in this traffic under the present joint rates. Its rails lie within the Dominion of Canada, and its corporate life and operations as a railway are carried on under the authority of the laws of Canada. It is contended, therefore, that this Commission has no authority to require the G.T.R. of Canada without its consent either to establish or to continue to maintain joint arrangements with our domestic carriers for the through movement of any traffic, and especially for the carriage of dynamite and other high explosives. The Canadian Commission in dealing with movements from the United States into Canada has recently held that the only practicable course for that Commission was not to interfere with the rates published by carriers within the jurisdiction of this Commission, and that upon a parity of reasoning our jurisdiction should be similarly limited with respect to rates published by Canadian carriers for movements into the United States. Some such understanding as between the two regulating bodies is desirable, an *din International Paper Co. v. D. & H. Co.*, 33 I. C. C., 270, as well as in other cases, this Commission has announced the same principle as a reasonable working basis in dealing with such traffic. It is there said (p. 274):

"The Canadian board has held that it should not consider the reasonableness of joint rates from points in the United States to points in Canada, published by U.S. carriers and concurred in by Canadian carriers. It has taken the position that this Commission having jurisdiction over the carriers primarily responsible for the making and publication of such rates, is the proper tribunal to consider the reasonableness thereof. *Continental Prairie & Winnipeg Oil Co. v. C.P. Ry. Co.*, 13 Can. Ry. Cas., 156; *C.N. Ry. Co. v. G.T. Ry. Co.*, 10 Can. Ry. Cas., 129."

We added that, in view of careful investigation that had been made by the Canadian Commission, we would not require the carriers subject to our jurisdiction to withdraw their concurrences in the rates there under consideration, namely, from points in the Dominion of Canada to points in the state of New York.

In the case before us here, however, we are called upon to consider the rights of shippers with respect to rates for the movement of traffic, not to or from points in Canada, but from a point in the United States through Canada to another point in the United States. While our powers respecting the through charges on such traffic seem not to have been considered in any previous formal proceeding before us, we had been under the impression that sec. 1 of the act imposes upon all the carriers participating in such traffic some control with respect to their charges for the service and particularly when the charges take the form of joint through rates. Such joint rates obviously are not under the control of the Canadian Commission and, under the principle referred to in the cases last

cited, seem necessarily to fall within our jurisdiction.

It is doubtless true that this Commission could not require a Canadian line not engaged in such traffic to accept shipments against its will or in violation of any Canadian police or other lawful regulation. But the G.T.R. of Canada does not propose to retire from traffic between domestic points in this country that may move over its rails. It does not propose even to retire from the traffic in high explosives between such points; on the contrary, as heretofore stated, we gather from the record that it proposes to continue to participate in the movement of high explosives from points in the U. S. to other points in the U. S. It will continue to accept through billing on such traffic, so far as this record advises us, even if the joint through rates are permitted to be canceled; but the policy announced by it is simply that it no longer desires to maintain joint rates on such commodities and hereafter will apply its materially higher local rates on all such through shipments. While proposing to continue in general traffic between our domestic points and in the movement of high explosives, the G.T.R. of Canada nevertheless denies that this Commission has any power to review or control its course in the premises with respect to the matter of its rates for the through movement.

There may be that limitation upon our powers respecting the rates and practices of carriers moving traffic between domestic points over intermediate Canadian rails. But obviously no definite ruling upon questions involving a possible conflict of authority as between the rate regulating bodies of this country and of Canada should be announced in such a case as this and upon such a record and without the most ample consideration of the matter in all its phases. We shall therefore express no final conclusions at this time respecting the question of our jurisdiction and the application of our act under the terms of sec. 1 to the rates and practices of the carriers moving traffic between domestic points over intermediate Canadian rails. The domestic member of the G.T. system is clearly subject to all the provisions of our act, both in the matter of its rates and routes, and under our law may inaugurate no such policy with respect to this particular traffic that has been announced by the Canadian member of that system. The points in Michigan on the rails of the domestic member of the system may be reached over reasonably convenient routes lying wholly within the U. S.; and a number of the carriers operating south of the lakes in our own territory are parties to the tariffs in question. The protestants are entitled to through routes and reasonable joint rates on this traffic to such destinations, and we shall expect the respondents to withdraw the tariffs under suspension until such routes have been established over the rails of our own lines at the through rates now in effect in connection with the G.T. system. In such rates and routes to local points on its rails the G.T. Western Ry. will be expected to join.

An order will be entered requiring the respondents to withdraw the tariffs under suspension until through routes and joint rates have been established as indicated in this report.

The Greater Winnipeg Water District Commission has under consideration tenders for the supply of tools and equipment for its machine shops at Deacon, Man. (May, pg. 170.)

The Canada Steamship Lines, Ltd., has given positive instructions that no intoxicating liquors are to be sold on any of its Lake Ontario boats this season.



### Rail Creeping.

By J. J. Eastman, Roadmaster, Prince Edward Island Railway.

Following are some of the causes of rail creeping: (1) The effect of gravity, from the top of the grade to a sag, together with the application of the brakes to the wheels on the down grade, is the first or aggressive cause. (2) Track laid without the proper spaces left at end of rails for expansion, this causing rails to creep in the direction of least resistance, if there are no trains running on it. (3) Track not properly buried in ballast to prevent ties moving sideways. (4) Spikes not driven down tight in contact with rail flange. (5) Slot spikes at joints getting worn out, and in some cases breaking off. (6) Joint bolts not kept perfectly tight. With the exception of the first cause these can, by close attention, be, to a certain extent, remedied.

In order to prevent rail creeping, or at least reduce it to a minimum, track must be well ballasted and filled within 1 in. of top of tie, with good heavy gravel or broken stone ballast, tie properly spaced and placed at right angle with rail, spikes at intervals kept driven down with head in contact with rail flange, slot spikes kept in good condition and in place, track bolts kept tight, and I have found it a good plan where joint ties keep pushing down grade in light ballast to put short struts made of 2 x 3 spruce between ends of ties on the down grade side, for three or four spaces, in order to get the support of the side thrust of three or four more ties to assist joint tie. No doubt the best preventive and final one, with the other conditions I have mentioned being attended to, is to apply a good anti-creeper, of which there are many on the market. I am not in a position to recommend any particular kind, as my experience in the use of them is limited.

But there are some peculiarities about rail creeping that are difficult to solve. I have in mind a piece of track on my own division on a down grade of 1.4% and curves of 9 degrees. On three miles there is only 0.3 mile of tangent altogether, made up of short tangents between curves. The right and left curvature about balances, track direction being about due east and west. This piece of track has in two years crept 18 ins. more on the north rail than on the other. It would be reasonable to think that on a long simple curve the outside rail would have a greater tendency to creep on account of the continual side friction of the wheels, but in the case I have mentioned, on account of the curves being about balanced, it is natural to conclude that the creeping would be about equal on both sides of the track. I would be pleased to have the opinion of some of your readers on this point. The only reason that I can see for this difference is that perhaps the heat of the sun in summer would have a better chance to strike the north rail during midday, especially in clay cuttings, where the south rail would be, to a certain extent, sheltered.—Can. Gov. Ry.'s Employees' Magazine.

### Railway Rolling Stock Notes.

The Canadian Northern Ry. has received 2 box cars from Crossen Car Co.

The Grand Trunk Pacific Ry. has received 13 express refrigerator cars, nos. 6000 to 6012, on an order of 50, from Canadian Car and Foundry Co.

The Intercolonial Ry has received 5 steel snow ploughs from Canadian Car and Foundry Co., and 5 box cars, 80,000 lbs. capacity, from Nova Scotia Car Works.

Press dispatches state that the Russian Government has placed orders, with the

Canadian Car and Foundry Co., for 2,000 box cars, and with the Eastern Car Co. for a similar number. Details of the construction, it is stated, are not complete, but it may be stated that the gauge of the Russian railways is 5 ft.

The private car being built for J. C. Eaton, Toronto, by the Preston Car and Coach Co., is to be of steel exterior finish, with the interior finished in wood. It will have an observation platform, observation room, 3 bedrooms, 2 sleeping sections, a dining room, servants' room and kitchen and will have all the latest improvements that are usually found on a car of this type. It will be provided with electric light and gas, and very probably Edison storage batteries will be used. The type of underframe will be similar to that used on C.P.R. and C.N.R. passenger cars, viz., the box girder type instead of the fish belly type.

Referring to the vote of \$2,250,000 by the Dominion Parliament at its last session for rolling stock for the Canadian Government Railways, some details of which were given in our last issue, we have been officially advised that the orders concerned are as follows:—National Steel Car Co., 8 steel sleeping cars, placed Mar. 11, date for delivery, Aug. 1; Preston Car and Coach Co., 4 steel sleeping cars, ordered Mar. 11, date for delivery July 31; Nova Scotia Car Works, 200 steel flat cars, ordered Mar. 11, date for delivery Aug. 1; Eastern Car Co., 250 steel gondola cars, ordered Mar. 11, date for delivery July 1; Canadian Allis-Chalmers, 3 consolidation locomotives, ordered Apr. 1, date for delivery July 31, and 4 switching locomotives, ordered Apr. 15, for delivery during May; Montreal Locomotive Works, 10 Pacific type passenger locomotives, ordered Mar. 13, 1914, delivered during Aug. 1914; Intercolonial Ry. Shops, Moncton, N. B., 4 baggage cars and 2 postal cars, for delivery by March, 1916. In addition to the foregoing, superheaters will be applied to 12 locomotives at the I.R.C. shops at Moncton.

### Canadian Northern Railway Construction, Betterments, Etc.

**Canadian Northern Quebec Ry.**—The Minister of Railways has approved route map in respect of revised location of the projected railway westward from Huberdean, Que. Huberdean is the terminal point of the old Montford and Galigneau Colonization Ry., and is situated 45 miles from the connection with the Montreal-Quebec line.

**Canadian Northern Ry.**—We are officially advised that while it is proposed to add some additional sidings to the terminal yards at Port Arthur, Ont., it is not proposed to make such extensive additions as a recent press report stated.

No official announcement has been made by the management as to its construction programme for the season for the territory from Winnipeg to Edmonton, but it is said that no new work will be put in hand. Whatever is done will be in the way of completing lines on which track has been laid, and going on with grading where there are uncompleted contracts. Even to what extent this is to be done is as yet uncertain. The only definite announcement is one credited to M. H. McLeod, General Manager, to the effect that ballasting on the main line west of Edmonton will be carried on. This will cover the Canadian Northern Pacific Ry. from the Alberta-British Columbia boundary to the Albreda Summit, construction of which was in charge of the Winnipeg office. The first gangs of men were sent out on the line April 29, and it was expected that over 1,200

would have been sent out from Edmonton by May 3. There are also a number of the smaller steel bridges to be put in by the bridge building companies between Yellowhead pass and Albreda Summit. Track is at present being carried over these streams by temporary bridges.

Two trains a week are being operated on the Peace River Branch, which at present extends from Oudway to Sangudo, Alberta, 38 miles. Grading has been completed from Sangudo, to Whitecourt and settlers are hoping that track will be laid on this section during this year.

**Canadian Northern Pacific Ry.**—A regular train service has been placed in operation on the first section of this line from Port Mann to Hope, B.C. This service will be extended as the other sections of the line are finally completed. The work to be done consists of the completion of the ballasting, and the general finishing up of construction work. It is expected to have the entire line opened up by Aug. 1. (May, pg. 180.)

### Victims of the Lusitania Disaster.

Additional comment on the sinking of the Cunard Line steamship *Lusitania*, by German torpedoes, off Old Kinsale Head, on the south coast of Ireland, May 7, is needless. The world wide indignation at such a heartless, and for all practical war purposes, useless crime, has been voiced in the daily press. There is no doubt that the vessel's destruction was carefully planned with the view of frightening the allied powers and the United States into removing the restrictions placed on shipping so far as Germany is concerned. In the main, the effect will be in the opposite direction. Diplomatic protests have been made to Germany by the neutral powers, and the outcome is a matter of guess work.

Among those who lost their lives in the sinking of the vessel, and who were more or less connected with transportation interests in the Dominion, were the Misses Anna and Gwen Allan, daughters of Sir Montagu Allan, formerly of the Allan Line, Montreal; F. S. Hammond, son of the late H. C. Hammond, formerly President of the Northern Navigation Co., Toronto; F. S. Pearson, who was associated with Sir William Mackenzie and others in a number of traction and allied companies in Mexico and Brazil; and F. Skelton, a director of the Canadian Shovel and Tool Co., Hamilton, Ont., and father of F. A. Skelton, Secretary, Canadian Car and Foundry Co., Montreal.

Among those on board who were saved were Lady Allan, wife of Sir Montagu Allan, Montreal; Mrs. F. S. Hammond; R. Holt, son of Sir Herbert Holt, director, C.P.R., Montreal; F. Orr Lewis, President, Canadian Vickers, Ltd., Montreal; D. A. Thomas, of Cardiff, Wales, who is connected with the projected Pacific, Peace River and Athabasca Railway and allied concerns in the Peace River District, Alberta, and his daughter, Lady Mackworth.

F. S. Pearson, was born in Lowell, Mass., July 3, 1861, and for some years practised as a mining engineer in the U.S. and Brazil. In 1888 he was Manager of the Somerville Electric Light Co., Somerville, Mass., and later served as Chief Engineer, West End St. Ry., Boston, Mass., and of the Dominion Coal Co., Sydney, N.S., which company owned the Sydney and Glace Bay Electric Ry., now owned by the Cape Breton Electric Co. Latterly he was President and director of the Mexico Tramways Co., Mexican Light and Power Co., Mexico North Western Ry., Rio de Janeiro Tramway, Light and Power Co., Barcelona Traction, Light and Power Co., and a director of Sao Paulo Tramway, Light and Power Co.



## Operating Results of United States Railways.

The net operating income of U. S. railways for February, the latest figures available, increased \$52 per mile, or 44.3%, compared with Feb., 1914; but Feb., 1914, was an abnormally poor month, net operating income per mile being 44.0% less than in February, 1913. The increase shown in February, which only partially overcomes the considerable decrease in the same item a year ago, is the result of radical reductions in operating expenses.

Total operating revenues were \$205,112,212, a decrease from 1914 of \$1,961,957. Operating expenses were \$155,031,302, a decrease of \$13,966,146. Net operating revenue was \$50,080,910, an increase of \$12,004,189. Taxes were \$10,995,903, a decrease of \$296,011. This left \$39,028,155 for net operating income, available for rentals, interest on bonds, appropriations for improvements and new construction, and dividends. Operating revenues per mile of line averaged \$897, a decrease of 1.9%; operating expenses per mile averaged \$678, a decrease of 9.1%; net operating revenue per mile averaged \$219, an increase of 30.3%, while taxes per mile were \$48, a decrease of 3.5%. Net operating income per mile was \$171, an increase of 44.3%. Railways operating 228,678 miles of line are covered by this summary, or about 90% of the steam railway mileage in the U. S.

The eight months of the current fiscal year show a decrease in total operating revenues per mile of line of 7.9% compared with the corresponding period of the preceding year, a decrease in net operating expenses per mile of 9.7%, and a decrease in net operating revenue per mile of 3.2%. This net operating revenue per mile increased 3.7% in the east, decreased 17.8% in the south, and decreased 3.7% in the west.

February operating income per mile was 44.3% greater in 1915 than in 1914, 19.6% less than in 1913; 18.1% less than in 1912, and 5.8% less than in 1911.

## Train Operation on Roberval-Saguenay Railway.

The Quebec Public Utilities Commission in a recent judgment upon the petition of the municipalities through which the R.S. Ry. passes, has ordered that the company submit for approval a schedule train service, either by passenger or mixed trains, whereby a train with passenger and baggage accommodation will proceed directly from Bagotville to Ha Ha Bay Jct., so as to connect with the Quebec and Lake St. John Ry.'s outgoing morning train from Chicoutimi, and the same company's incoming train which arrives from Quebec in the evening and which passes Ha Ha Bay Jct. en route to Chicoutimi. This service is to be maintained in constant operation every day except Sundays, or on such days as the Q. and L. St. J. Ry. trains are regularly scheduled. In the event of the company desiring to diminish this service at a future date it shall make application to the Commissioner, filing full reasons, details of traffic and statements in support thereof at least 30 days before it is intended to put such altered schedule into effect. It is also directed that the company take means to render the present mixed train service more conformable to the time scheduled for it than its present operation shows.

In reference to allegations made as to improper and insufficient passage accommodation upon trains and the backing of trains over considerable distances in a dangerous manner, the Commission finds that they have substantial foundation, and

are not to be altogether entertained. The backing of trains, however, does not appear to be sufficiently protected, and the Commission directs that a man be stationed on the front car in backing up, provided with a whistle, bell or horn during the day, and a light at night, to give warning of the approach of the train.

In giving reasons for this order the commissioners state that while the train service at present being given complies with the minimum required by the subsidiary contract between the Department of Railways and the company, is not an adequate and reasonable provision for the passenger requirements of the public, and moreover failed entirely to make connection with the Q. and L. St. J. Ry. trains at Ha Ha Bay Jct. or Chicoutimi, which was one of the reasons for granting the Dominion and Provincial subsidies. The company submitted that the traffic on the line did not warrant the outlay necessary to give the additional service, and pointed out that the present service was given at a loss for the year ended Dec. 31, 1914, of \$3,923.93. The applicants contended that one reason for this deficit was that special freight rates, considerably below its ordinary charges, had been granted certain shippers. The commissioners do not say that a clear intention to this "as it is an apparent or real breach of the law governing such matters." The commissioner's do not say that a clear case is made out for this, "but it certainly appears that the rates charged by the company in certain instances are lower than the general and accepted tariffs would warrant \* \* \* \* We are of opinion that with some reasonable change in its freight tariff charges and more regard for the convenience of passenger traffic the operating returns would be increased. In any event we feel that the object for which public aid has been given in a substantial way (representing approximately one-half of the total cost of the lines) is being largely defeated by the meagre passenger accommodation that is presently afforded."

## Canadian Overseas Railway Construction Corps.

This corps, which has been raised by the C. P. R. management at the request of the British War Office through the Dominion Militia Department, and the details of the organization of which with a diagram of the same are published in Canadian Railway and Marine World for April, has been mobilized at Christopher's Pit, just outside West St. John, N. B., where the officers and men have been accommodated in between 40 and 50 C. P. R. cars which were placed on sidings there.

F. L. Wanklyn, General Executive Assistant, C. P. R., has been appointed Honorary Lt. Col. of the corps.

Following is a list of the officers with particulars of their civil and military qualifications:

### Regimental Staff.

Officer Commanding, rank, Lieutenant Colonel, Colin Worthington Pope Ramsey, age 32; 16 years general railway construction. Captain's Class A certificate Royal School of Infantry, St. Johns, Que., 1902. Gazetted Lt. Col., March 11, 1915.

Chief Engineer, rank, Major, John Garnett Reid, age 37; 18 years general railway construction.

Adjutant, rank, Captain, LeRoy Fraser Grant, age 31; 2 years railway construction and 6 years general municipal engineering. Graduate Royal Military College and two years commissioned officer in permanent force Canadian Militia.

Medical Officer, rank, Captain, Frank

Ernest Pettman, age 36; 2 years general practice and hospital experience, three years in charge of hospitals on railway construction work in B. C.

Quartermaster, rank, Major, Bertram Poidevin Richardson, age 43; 19 years railway construction and general engineering work. 1900-03 Quartermaster and Superintendent of military works South Africa (war medal).

Paymaster, rank, Captain, John Henry Pope, age 31; 12 years general business experience. Field officer's certificate, Divisional School, Sherbrooke, Que., 1903.

### No. 1 Company.

Superintendent of Construction, rank, Major, Chelton Longley Hervey, age 43; 23 years general railway construction work. St. Johns Military Academy and one year sergeant in U. S. Engineers, Spanish-American War. 1909-15 Lieut. Corps of Guides, Divisional Area No. 4.

Mechanical Engineer, rank, Captain. (Various applications being considered for this position.)

Superintendent, rank, Lieutenant, Daniel Hillman, age 38, 14 years general railway construction.

Superintendent, rank, Lieutenant, William Henry Douglas Murray, age 35; 17 years railway and building construction and general contract work; 8 years with volunteers, portion of time non-commissioned officer.

Bridge Engineer, rank, Lieutenant, LeRoy Zimmerman Wilson, age 26, 6 years with Dominion and St. Lawrence Bridge Co.'s designing and erecting engineer. Provincial Lieutenant 4th Field Company, Canadian Engineers. Recently qualified.

Superintendent, rank, Lieutenant, Henry Wellwood, age 36; 12 years general railway construction. Provisional Lieutenant 38th Regiment; recently qualified.

### No. 2 Company.

Superintendent of Construction, rank, Major, Alfred George Tully LeFevre, age 41; 21 years general railway construction. Graduate Royal Military College. Captain and acting Adjutant 5th Westmount Rifles.

Bridge Engineer, rank, Captain, (Various applications being considered for this position.)

Superintendent, rank, Lieutenant, Kenneth A. Ramsay, age 33; 13 years general railway construction. Royal Military College 1900-02.

Superintendent, rank, Lieutenant, Erskine Duncan, age 34; 14 years general railway construction; 2 years with volunteers in ranks.

Superintendent, rank, Lieutenant, Francis Bernard Connors, age 28, 9 years general railway construction; 2 years with volunteers Jan. 13, to Mar. 15, 1915. Sergeant 12th Canadian.

Superintendent, rank, Lieutenant, Henry Lewis Sherwood, age 33; 12 years general railway construction. Graduate Royal Military College, 1903.

Overland Wireless Telephony between Scranton, Penn., and Binghamton, N. Y., 63 miles, has been developed by L. B. Foley, Superintendent of Telegraphs, Delaware, Lackawanna & Western Rd. For some time the company has maintained wireless telegraph communication between Hoboken, N. J., Scranton, Binghamton and Buffalo, N. Y., and between these stations and moving express trains. This service has been relied on in emergencies (storms) to maintain the train dispatching. The use of radio-telephony as well as telegraphy is part of the development of this auxiliary service; it is desired thus to communicate over a distance of 50 miles from a fixed station to a train and over 150 miles between fixed stations.



## Canadian Pacific Railway Construction. Betterments, Etc.

Sir Thomas Shaughnessy, President, returned to Montreal, May 6, after a trip to California, from which he returned via Vancouver, inspecting the company's western lines en route. He stated that on the trip he had given instructions to have full gangs of men put at work all along the line on track improvement and on general betterment undertakings. This kind of work is ordinarily started at this time of the year, and in view of the present situation it was decided to do all of it as soon as possible instead of spreading it over the entire construction season. It is expected that as a result the total amount of work done will be considerably in excess of what would ordinarily have been accomplished. To some extent this same policy is being carried out on the company's eastern lines. There is not, however, the same amount of work to be done in the east as in the west. It is hoped that this policy will tend to relieve the unemployment situation which has been proving a strain upon the municipal authorities in some places. There will not be any new work undertaken at present, but all work in hand will be continued.

**Eastern Division.**—A spur line of about 2,000 ft. has been built a few miles east of Dorval, Que., to the new cavalry remount depot established by the Dominion Government, where accommodation is provided for 3,000 horses. The spur will provide for the handling in and out of the horses, together with feed, etc. A 1,000 ft. platform has been built. The work was done in six days by the company's own forces under the charge of R. McKillop, Division Engineer.

**Ontario Division.**—Darling & Pearson, architects, Toronto, have been engaged to prepare plans for the union station at North Toronto for the joint use of the C.P. R. and the Canadian Northern.

**Pacific Division.**—A press report states that a subcontract has been let to the Bates and Rogers Construction Co., Spokane, Wash., for concrete lining the Rogers Pass tunnel. The estimated cost of the work to be done under the contract is said to be \$300,000. (May, pg. 176.)

## Railway Development in British Columbia.

In an interview by a representative of Canada, a periodical published in London, Eng., Sir Richard McBride, Premier of British Columbia, while visiting England, is reported to have said, recently:—

"Railway development has been progressing at a splendid rate in British Columbia. Of the different railway projects with which the province has been associated, the Kettle Valley Ry., which is part of the C. P. R. system, will be completed and in operation this year. The main line of the Canadian Northern has already been completed to tidewater at the coast, and I have it on the authority of Sir William Mackenzie that a regular train service will be inaugurated during the summer. On Vancouver Island the C. N. R. has proceeded splendidly with construction between Patricia Bay and Alberni, and negotiations are now in progress between the Government and the company to the end that the steel will be laid and a train service on the Island inaugurated in the near future. The Pacific Great Eastern, from Vancouver to Fort George, has been graded throughout the entire mileage, with the exception of a small section round Howe Sound, and upward of 50 miles of the road

are now in operation. The P. G. E. R., in addition to opening up a large section of the interior, will also bring the G. T. Pacific system into touch with the city of Vancouver. It is expected that this line will prove of great value to the country. The G. T. P. R. is operating three trains a week through to Prince Rupert, and I have no doubt that as soon as conditions warrant, the people of the northern district will have a daily trans-continental service.

"In respect of the Pacific Great Eastern, the proposals of the Province are to carry this road to the Peace River, and unquestionably, when money conditions permit, the portion of the line from Fort George north will be at once undertaken. Considerable interest has been taken on the U. S. side in the P. G. E. R. development, in view of the attention which the U. S. Government is devoting to the opening up of Alaska. Those who have studied the problems of western development seem to be of the opinion that unless and until the U. S. Government joins with that of British Columbia or of Canada in permitting the continuance of the P. G. E. R. further north through Yukon and into Alaska, the whole making a main arterial line, the expansion and development of the northern section of the continent will not proceed as it ought to do. Personally, I have been closely in touch with Washington and Ottawa in the endeavor to have the subject actively pushed, and I have every reason to feel that the day is not far distant when we may be able to claim a north and south line from British Columbia right through to Alaska that will give to hundreds of thousands of enterprising people fresh and profitable opportunities of making new settlements."

## A Public Utilities Commission for Alberta.

The Alberta Legislature has passed an act for the creation of a Public Utilities Commission for the Province. It provides for the appointment of three commissioners to hold office for ten years, one of whom shall be chairman. The commissioners are to devote their whole time to the commission's work and may be reappointed upon the expiration of their ten years' term, but no commissioner may remain in office after attaining 70 years of age. Otherwise a commissioner can be removed only by the Lieutenant-Governor upon an address of the Legislature. No commissioner may be financially interested in any public utility in the Province, or in any device or appliance used in the business of a public utility.

The commissioners are to have a supervisory jurisdiction over public utilities with power to make such orders as to equipment, appliances, safety devices, extension of works or system as are necessary for the safety or convenience of the public, or for the proper carrying out of any contract or franchise involving the use of any public property or rights; and to enquire into the merits of any application of a local authority to raise money by debentures, and to grant or refuse permission.

Public utilities owned by the cities or towns of the Province are exempt from the provisions of the act, unless a bylaw be passed bringing them under it, and public utilities owned by corporations existing at present are also exempted.

The commissioners will have jurisdiction in all questions relating to the transportation of goods, or passengers on the lines of any street railway, or steam railway, and may authorize any such company to carry goods or passengers on its lines for any

period of time and at such prices as it may fix. It will have jurisdiction in regard to tolls charged; may order extensions; and has power to see to the making of agreements between municipalities and the owners of public utilities.

It is given full power to hold investigations into all matters within its purview, either upon its own initiative, or upon receipt of a complaint; to obtain information as to how the owners of public utilities are complying with the law; to appraise and value public utilities when necessary; to impose and enforce regulations for the safety of the public and employees, etc.

No franchise for a public utility is hereafter to be granted without the approval of the commissioners; and no railway company may close a station, or stop the sale of passenger tickets or remove an agent, to receive and discharge freight at any point without the consent of the commissioners.

## Discrimination in Favor of Grand Trunk Railway Prohibited.

The Interstate Commerce Commission has rendered a decision in which it finds that the practice of the Crosby Transportation Co., in selling through tickets via its boats and the Detroit, Grand Haven & Milwaukee Ry. between Milwaukee, Wis., and Grand Rapids, Mich., and refusing to sell through tickets between the same points via the Grand Rapids, Grand Haven & Muskegon Ry., is unjustly discriminatory. The Detroit, Grand Haven & Milwaukee Ry. is a steam road, operated by the Grand Trunk Ry. The Grand Rapids, Grand Haven & Muskegon Ry. is an electric interurban line. The following extracts from the decision sufficiently describe both the circumstances of the case and the position which the commission takes: "That the service of the electric road accords with the convenience of a large proportion of the travelling public is evidenced by the fact that a considerable number of persons travel over the electric line in the journey between Grand Rapids and Milwaukee, although put to the inconvenience of buying new tickets and rechecking baggage at Grand Haven. The docks at Milwaukee used by the Crosby Transportation Co. are owned by the Chicago, Milwaukee & St. Paul Ry., but are leased by the G.T.R. The dock at Grand Haven is owned by the G.T.R. It is urged on behalf of the G.T.R. that its ownership of the dock at Grand Haven should give it the right to exclude its competitor from its use and enjoyment. The Crosby Transportation Co. is an independent company, but is the exclusive carrier for the G.T.R. between Milwaukee and Grand Haven. Its arrangement with the G.T.R. permits the use of the G.T.R. dock by the steamboat company. There is nothing in the record that leads to the conclusion that the use of this dock or of the dock at Milwaukee by the transportation company is contingent on that company turning over all of the through traffic to the G.T.R. Neither is it clear that such a condition could be imposed. The electric line from Grand Rapids to Grand Haven is not in any sense a competitor of the Crosby Transportation Co. The latter named company can not be exempted from fulfilling its obligations as a common carrier to furnish a public service without discrimination. We are of the opinion that the Crosby Transportation Co. by selling through tickets over the G.T.R. between Grand Rapids and Milwaukee and refusing so to do via the Grand Rapids, Grand Haven & Muskegon Ry. unduly prefers the G.T.R. and unduly discriminates against the Grand Rapids, Grand Haven & Muskegon Ry. An order will be entered in conformity with the conclusion herein expressed."



# Canadian Railway AND Marine World

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## R. F. Morkill Not Killed as Reported.

Railway Review, Chicago, had the two  
following items in its issue of May 15.

"R. F. Morkill, Signal Engineer of the Grand  
Trunk Ry., has been killed in the war in Bel-  
gium. Mr. Morkill was on leave of absence,  
serving with the Canadian contingent.

"Barton Wheelwright, Inspector of Signals of  
the Grand Trunk Ry., has been appointed Signal  
Engineer, with office at Montreal, Que. R. F.  
Morkill, formerly Signal Engineer, has been  
killed while serving with the Canadian troops  
in Belgium."

Canadian Railway and Marine World is  
pleased to be able to say with Mark Twain that  
the items above quoted are "greatly  
exaggerated."

On May 19, H. R. Safford, Chief Engineer,  
G.T.R., Montreal, telegraphed to one of Mr.  
Morkill's Toronto friends in reference to  
an inquiry as follows:

"No truth in Chicago rumors about Mor-  
kill. Last report stated everything satis-  
factory."

On May 21, H. R. Charlton, General Ad-  
vertising Agent, G.T.R., Montreal, wrote  
Canadian Railway and Marine World as fol-  
lows: "There is no truth in the report that  
Barton Wheelwright has been appointed  
Signal Engineer of the Grand Trunk, nor  
have we any information that Mr. Morkill  
has been reported in the casualty list."

Barton Wheelwright, Inspector of Signals,  
G.T.R., has, we are informed, been acting as  
Signal Engineer since Mr. Morkill left for  
overseas service.

When last heard from, a short time ago,  
Mr. Morkill was engaged in the installation  
of high power searchlights on the English  
coast.

## Acquirement of Branch Lines for the Canadian Government Railway System.

The Minister of Railways moved in the  
House of Commons, Mar. 24, three resolu-  
tions respecting the purchasing of certain  
lines by the Dominion Government. The  
first set out that it was expedient to author-  
ize the Minister, subject to the authority of  
the Governor-in-Council, to construct, pur-  
chase or acquire in whole or in part any  
railway, railway bridge, station, terminal  
ferry, or other work in Quebec, New Brun-  
swick, Nova Scotia or Prince Edward Island,  
provided that the lease or contract for  
purchase be submitted to Parliament; that  
no railway to be acquired shall exceed 200  
miles in length; that no contract for the  
building of any line of more than 25 miles  
shall be entered into without an appropria-  
tion having been made by Parliament; that  
any railway so acquired shall form part of  
the Government railway system, and that  
no railway shall be acquired unless it direct-  
ly connects with some part of the then ex-  
isting Government system. The second  
resolution ratifies and confirms an agree-  
ment made Aug. 1, 1914, with the Inter-  
national Ry. of New Brunswick and Thos.  
Malcolm, for the purchase of the entire  
undertaking of the I.R. of N.B., extending  
from Campbellton to St. Leonard, 112 miles,  
for \$275,000, payable any time within five  
years from date of agreement, and pending  
the payment of the purchase money for the  
lease of the line at \$90,000 a year, payable

half yearly. The third resolution ratifies  
and confirms an agreement dated Mar. 18,  
1915, for the purchase of the New Brun-  
swick and Prince Edward Island Ry. from  
Sackville to Cape Tormentine, N.B., 36  
miles, for \$270,000, and providing that until  
the purchase money is paid interest on that  
amount at 4% shall be paid from Aug. 1,  
1914.

The resolutions were passed, but were dis-  
cussed at some length when they came be-  
fore the House in form of a bill. The  
principal amendment made was one author-  
izing the Minister to lease branch lines,  
with or without an agreement to purchase,  
and another providing that where a line  
over 25 miles in length is acquired no  
money shall be paid therefor until it has  
been voted by Parliament.

This matter was under discussion in the  
session of 1912-13 when power was given to  
the Minister by the House of Commons to  
acquire a line not more than 200 miles in  
length or to build a line not more than 25  
miles in length without the consent of  
Parliament. The Senate declared that this  
should only be done with the consent of  
Parliament, and as the House of Commons  
would not agree, the measure was dropped.

The House of Commons has voted  
\$12,500 for the International Ry. of New  
Brunswick, and \$49,700 for the New Brun-  
swick and Prince Edward Island Ry., to  
bring them up to the standard of Inter-  
colonial branch line construction.

**Dominion Atlantic Ry. Men in Active  
Service.**—The following are those in the  
service of the Dominion Atlantic Ry. Engi-  
neering Department, who are now on, or pre-  
paring for, active service in Europe:

J. G. St. J. Ellis, heretofore Assistant En-  
gineer, who is in England qualifying for a  
commission in the Royal Engineers; W. H.  
Parker, instrument man and masonry in-  
spector, who joined the army at the begin-  
ning of the war as a private, and has since  
received a commission as Second Lieu-  
tenant, 2nd Royal Muser Fusiliers; J. R.  
C. Tyler, instrument man and masonry in-  
spector, 2nd Lieutenant, 7th Battalion York  
and Lancaster Regiment; C. Hyde, rod man,  
with the Canadian Medical Corps, and W. A.  
Archibald, with the McGill Hospital Corps

**Women as Conductors.** One of the results  
of the war in Europe is the employment of  
women to take the places of men, in various  
capacities, to which they are suited. On the  
continent, women have been utilized as con-  
ductors on street cars for some time, and  
their services are now being utilized in  
Glasgow, Scotland, where it is stated the  
experiment is only being tried with two wo-  
men employees of the Corporation Tramways,  
and that no decision has been arrived at as  
to whether it will be adopted extensively,  
but, if it is, it will be only a temporary  
measure to tide over the present shortage

**Merchant Navies.**—Figures quoted show-  
ing the tonnage of the seven chief merchant  
navies of the world are as follows: Great  
Britain 20,030,587; Germany, 4,998,746;  
United States 3,489,736; Norway 2,475,324;  
France 2,246,504; Japan 1,700,062; Italy  
1,571,761. The British tonnage is more than  
3,500,000 tons greater than that of the  
other six countries combined. It is scarcely  
necessary to mention that the German  
merchant marine is not in active service at  
present.

The Medical Officer of Health of Saska-  
toon, Sask., is using advertising signs on  
the municipal railway to educate the  
citizens upon matters under his depart-  
ment's control.

The Moncton & Buctouche Ry. has ar-  
ranged for its locomotive and car repair  
work to be done at the Intercolonial Ry.'s  
shops at Moncton, N.B.



## Transportation Appointments Throughout Canada.

The information under this head, which is taken entirely gathered from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may require any other in our announcements will receive it by advising us.

**Algoma Eastern Ry.—J. A. DRESSER** having retired as Manager of the Lands Department, the work is now being carried on under the supervision of R. S. McCORMICK, Chief Engineer. Office, Sault Ste. Marie, Ont.

**Canada Steamship Lines, Ltd.—C. E. CROFT**, formerly Chief Clerk to Operating Superintendent, Passenger Steamers, Toronto, has been appointed General Agent, Passenger Traffic Department, (Commisary). Office, Yonge St. Wharf, Toronto.

Additional appointments and details of rearrangement of Passenger Traffic territory will be found on another page in the Marine Department.

**Canadian Government Railways.—J. K. McNEILLIE**, heretofore Superintendent, District 3, Eastern Division, C.P.R., Montreal, has been appointed General Superintendent, Intercolonial Ry., Prince Edward Island Ry. and National Transcontinental Ry. east of Quebec, vice F. P. Brady, transferred. Office, Moncton, N.B.

**Dr. W. A. FERGUSON** has been appointed Chief Medical Officer. Office, Moncton, N.B.

Appointments consequent on the taking over of the National Transcontinental Ry. Grand Trunk Branch, and the Lake Superior Branch, will be found on another page under "Government Operation of the National Transcontinental Ry."

**Canadian Northern Ry.—S. J. HUNGERFORD**, Superintendent of Rolling Stock, has had his jurisdiction extended over the Eastern Lines. Office, Winnipeg. (At present he is located in Toronto attending to shell manufacture by the Universal Tool Steel Co., Ltd.)

**W. C. MOORE**, heretofore Road Foreman of Locomotives, Trenton, Ont., has been appointed Master Mechanic, Ottawa Division, reporting to the Superintendent. Office, Trenton, Ont.

**W. H. LONG**, heretofore acting General Car Foreman, Toronto, has been appointed Division Car Foreman, Ottawa Division, reporting to the Master Mechanic. Office, Trenton, Ont.

**W. M. HOOD**, heretofore Travelling Passenger Agent, Toronto, has been appointed City Agent, Passenger, Express and Freight Departments, Oshawa, Ont.

**J. W. FINDLAY**, heretofore Road Foreman of Locomotives, Parry Sound, Ont., has been appointed Master Mechanic, Toronto Division, reporting to the Superintendent. Office, Parry Sound, Ont.

**W. F. MILLER**, has been appointed Division Car Foreman, Toronto Division, reporting to the Master Mechanic. Office, Parry Sound, Ont.

**O. C. BISHOP**, heretofore acting Superintendent, Sleeping, Dining and Cafe Cars and News Department, Winnipeg, has been appointed Superintendent of Sleeping and Dining Cars and News Service, Western Lines. Office, Winnipeg.

**J. M. GRIEVE** has been appointed Assistant Superintendent of Sleeping, Dining and Parlor Cars and News Service, Western Lines, Office, Winnipeg.

**C. D. FRENCH**, heretofore in the General Stores Department, has been appointed storekeeper, Humboldt, Sask., vice S. K. Moorcroft, promoted.

**S. K. MOORCROFT**, heretofore storekeeper, Humboldt, Sask., has been appointed Division Storekeeper, Saskatoon, Sask., vice A. E. Down, who has joined the 28th Battalion for service in Europe.

**T. R. McLEOD**, heretofore Master Mechanic, Ontario Grand Division, Toronto, has been appointed Superintendent, Pacific Division, and his former position has been abolished. Office, Port Mann, B.C.

**Canadian Pacific Ry.—W. H. WINTERROWD**, heretofore Mechanical Engineer, Angus Shops, Montreal, has been appointed Assistant to Chief Mechanical Engineer. Office, Montreal.

**A. E. STEWART**, heretofore District Master Mechanic, District 1, Ontario Division, Toronto, has been appointed Assistant Superintendent, District 2, Atlantic Division, vice W. J. Pickrell, appointed Master Mechanic, Ontario Division. Office, Aroostook, Jct., N.B.

**N. E. GUTELIUS**, heretofore Resident Engineer, Montreal, has been appointed Resident Engineer, Brownville Jct., Me., vice M. Kelly, transferred.

**W. FORREST**, heretofore General Car Inspector, Windsor St. Station, Montreal,



**F. P. Brady**,  
General Superintendent, National Transcontinental Ry., and G.T. Pacific Ry. Lake Superior Branch, Canadian Government Railways.

has been appointed Car Foreman at Lake Megantic, Que.

**F. W. COOPER**, A.M.Can.Soc.C.E., whose appointment as acting Superintendent, District 1, Eastern Division, Farnham, Que., was announced in our last issue, has been appointed Superintendent there.

**M. McD. DUFF**, heretofore Assistant Manager Steamship Lines, Montreal, has been appointed Manager, Great Lakes Steamship Service. Office, Montreal. We are advised that the change is one of title only, and that his duties remain as heretofore.

**M. A. FULLINGTON**, A.M.Can.Soc.C.E., heretofore Assistant Superintendent, District 4, Eastern Division, Ottawa, Ont., has been appointed Superintendent, District 3, Eastern Division, vice J. K. McNeillie, resigned to enter Canadian Government Railways service. Office, Montreal.

**W. D. NEIL**, heretofore at Winnipeg, has

been appointed Superintendent of Telegraph Traffic, Montreal, vice J. Fletcher, transferred to Winnipeg.

**W. TANSLEY**, heretofore Assistant Superintendent, District 3, Ontario Division, Toronto, has been appointed Assistant Superintendent, District 5, Eastern Division, vice J. H. Hughes transferred. Office, Smith's Falls, Ont.

**F. M. RUTTER**, A.M.Can.Soc.C.E., heretofore Assistant Division Engineer, Eastern Division, Montreal, has been appointed Assistant Superintendent, District 3, Ontario Division, vice W. Tansley, transferred. Office, Toronto.

**G. I. EVANS**, heretofore Superintendent, Locomotive Shops, Angus Shops, Montreal, has been appointed District Master Mechanic, Districts 3 and 4, Ontario Division, vice C. Connors, transferred. Office, Toronto.

**G. H. DAVIS**, heretofore Resident Engineer, District 4, Ontario Division, has been appointed Assistant Division Engineer, Eastern Division, Montreal, vice F. M. Rutter, promoted.

**C. CONNORS**, heretofore District Master Mechanic, Districts 3 and 4, Ontario Division, Toronto, has been appointed District Master Mechanic, District 1, Ontario Division, Toronto.

**J. FLETCHER**, heretofore Superintendent of Telegraph Traffic, Montreal, has been appointed Superintendent of Telegraph Traffic, Winnipeg. This is a new position.

**H. G. REID** heretofore Master Mechanic, Lake Superior Division, North Bay, Ont., has been appointed Master Mechanic, Saskatchewan Division, vice M. J. Scott, transferred. Office, Moose Jaw.

**D. COONS**, Superintendent of Telegraphs, Alberta Division, Calgary, has been appointed Superintendent of Telegraphs, Saskatchewan Division, vice J. F. Richardson, resigned. Office, Moose Jaw.

**M. J. SCOTT**, heretofore Master Mechanic, Saskatchewan Division, Moose Jaw, has been appointed Master Mechanic, Alberta Division, vice A. Sturrock, transferred. Office, Calgary.

**D. L. HOWARD**, heretofore Inspector of Telegraphs, Medicine Hat, Alta., has been appointed Superintendent of Telegraphs, Alberta Division, vice D. Coons, transferred. Office, Calgary.

**H. H. GOODFELLOW**, heretofore assistant chief operator, Telegraph Department, Vancouver, B.C., is reported to have been appointed Inspector of Telegraphs, Medicine Hat, Alta., vice D. L. Howard, promoted.

**A. STURROCK**, heretofore Master Mechanic, Alberta Division, Calgary has been appointed Master Mechanic, British Columbia Division, vice D. T. Main, promoted. Office, Vancouver.

**W. H. ROWLANDS**, heretofore assistant port steward, has been appointed port steward, British Columbia Coast Steamship Service, vice J. S. Byrom, promoted to Great Lakes Steamship Service. Office, Victoria.

**Central Vermont Ry.—S. S. RUSSELL**, heretofore Superintendent, Northern Division, St. Albans, Vt., has been appointed Special Agent. Office, St. Albans, Vt.

**Chicago, Milwaukee & St. Paul Ry.—T. P. CASEY**, heretofore Travelling Freight & Passenger Agent, Buffalo, N.Y., has been appointed Canadian Freight & Passenger Agent, succeeding A. J. Taylor, deceased. Office Toronto.

**W. H. D. Snazel**, who acted in Mr. Taylor's place during his several months' absence through illness, continues as Travelling Freight & Passenger Agent at Toronto.

**Dominion Atlantic Ry.—J. A. MACKAY**, has been appointed acting Assistant Engineer, vice J. G. St. J. Ellis, who is in Eng-



land qualifying for service with the Expeditionary Force. Office, Kentville, N.S.

**Edmonton, Dunvegan and British Columbia Ry.**—R. M. HALPENNY, heretofore Trainmaster, Grand Trunk Pacific Ry., Jasper, Alta., has been appointed Superintendent, E. D. & B. C. R., and his former position has been abolished.

**Grand Trunk Pacific Ry.**—A. KILPATRICK, heretofore Superintendent, Edmonton, Alta., to Prince George, B.C., Edson, Alta., has been appointed Superintendent of the Lake Superior Division, vice A. A. Tisdale, who has been granted temporary leave of absence. Office, Fort William, Ont.

T. W. PALOS has been appointed Locomotive Foreman, Graham, Ont., vice R. G. Gilbride, resigned.

C. E. BROOKS, heretofore General Foreman in charge of Shops, Transcona, Man., has been appointed acting Superintendent of Motive Power, vice J. Billingham, Superintendent of Motive Power, resigned. Office, Transcona, Man.

H. McCALL, Superintendent, Winnipeg, Man., to Watrous, Sask., and Melville-Canora Branch, Edson, Alta., has had his jurisdiction extended to include the Regina Division, on the transfer of J. P. Kirkpatrick to Edson, Alta. Office, Melville, Sask.

J. P. KIRKPATRICK, heretofore Superintendent, Regina Division, has been appointed acting Superintendent, Edmonton, Alta., to Prince George, B.C., and intersecting branch lines, vice A. Kilpatrick, temporarily transferred to Fort William, Ont. Office, Edson, Alta.

W. C. C. MEHAN, General Superintendent, Prince Rupert, B.C., has had his jurisdiction extended to include the territory between Prince George, B.C., and the west switch at North Edmonton, Alta.

The following station agents have been appointed,—Pope, Man., P. C. Sells; Asquith, Sask., R. L. Harrop; Yorkton, Sask., T. J. Shields.

**Grand Trunk Ry.**—W. C. SEALY, heretofore Assistant Master Mechanic, Ontario Lines, has been appointed Master Mechanic, Ontario Lines, vice J. Markey, deceased. Office, Toronto.

J. R. LECKIE, heretofore Locomotive Foreman, London, Ont., has been appointed Assistant Master Mechanic, Ontario Lines, vice W. C. Sealy, promoted. Office, Toronto.

J. A. WALTON, heretofore Locomotive Foreman, Palmerston, Ont., has been appointed Locomotive Foreman, London, Ont., vice J. R. Leckie, promoted.

W. H. ARCHER has been appointed Locomotive Foreman, Palmerston, Ont., vice J. A. Walton, transferred.

J. McPEAK, formerly Commercial Agent, Detroit, Mich., who has been on leave of absence through ill health, for some time, has returned to service with the title of Travelling Freight Agent, at Detroit, Mich. H. H. Hamill is Commercial Agent there.

The following station agents have been appointed,—Aultsville, Ont., J. A. Roch; Hoards, Ont., R. S. Davidson; Beachville, Ont., C. V. Vail; Mitchell, Ont., W. A. Abrey; Ilderton, Ont., C. H. Duplan; Vars, Ont., K. J. Mills; outside agency, Pottersburg, Ont., W. J. Duffin. The station at Terra Cotta, Ont., and the outside agency at Omemee, Ont., have been closed.

**Intercolonial Ry.**—T. L. LANDERS, has been appointed acting Resident Engineer, District 3, vice W. A. Cowan. Office, Truro, N.S.

F. F. CAREY, heretofore locomotive driver, has been appointed acting District Master Mechanic, District 3, Moncton, N.B. See also Canadian Government Railways.

**National Transcontinental Ry.**—See under

"The Dominion Government operates the N. T. R.," on another page.

A. E. DOUCET, District Engineer, section B., at Quebec, retired from the service April 30, and the office was closed. The small amount of work still to be done on the line in that district will be under the jurisdiction of Arthur Dick, formerly one of the division engineers.

### Grand Trunk Railway Betterments, Construction, Etc.

**Track Elevation in Montreal.**—The City Engineering Department has submitted to the Board of Control a further estimate of the cost of elevating the G. T. R. tracks from Bonaventure station to St. Henri. The present estimate is \$6,000,000 instead of the \$8,000,000 originally estimated, and towards which the city obtained legislative authority to contribute \$2,000,000. The last estimate of the G. T. R. placed the cost of the elevation at \$10,000,000 and asked the city to



J. K. McNeillie,  
General Superintendent, Canadian Government  
Railways.

increase its contribution by \$500,000. The present estimate is the reply of the city to the railway company. The principal item upon which there has been a reduction in the city's estimates is in regard to the construction of the bridges across the streets. The city takes exception to the general plan adopted by the railway engineers, under which two sets of columns would be placed under the steel bridges which will span the city streets, piercing the embankment on which the tracks will run. The city officials hold that, in many cases, the columns provide unnecessary strength, and that single span bridges will suffice, thus reducing by a large amount the steel work required. The city, too, does not agree that the company should calculate on getting 6% interest on the capital employed in the improvement, and suggests that a lower rate should be substituted. The contention that 3% should be allowed as the cost of marketing securities which may be rendered necessary as a result of the charges imposed in both parties by the Railway Commission, is not acceptable.

It is expected that the report will be approved by the City Council at an early meeting after which it will go before the Board of Railway Commissioners for consideration along with the G. T. R. plans. (May, pg. 176.)

### The Delaware and Hudson Company in Canada.

The Delaware and Hudson Co. owns two railways in Canada—the Quebec, Montreal and Southern, extending from Noyan Jct., to Belleville, 81 miles, from a junction with the G. T. R. at St. Lambert to Fortierville, 109.69 miles, and from St. Constant Jct. to Napierville Jct., 1.40 miles, a total of 192.09 miles; and the Napierville Jct. from St. Constant Jct. to Rouse's Point, Que., 27.06 miles. At the latter point connection is made with the Delaware and Hudson Rd.'s main line, which extends northerly to Wilkes Barre, Pa. The total mileage of railways owned and operated by the company is 903.99, so that almost 25% of its mileage is in Canada.

The directors' report for the year ended Dec. 31, 1914, shows that the revenue in the railway department was \$22,595,028.50, a decrease of \$1,558,466.23 from 1913; the operating expenses excluding taxes were \$15,048,452.04, a decrease of \$161,854.81; the net operating revenue was \$7,546,576.46, a decrease of \$1,396,611.42.

The percentage of expenses to revenues increased from 62.97% in 1913 to 66.60% in 1914. The figures showing the revenues of the Canadian lines are not given separately, but they are to be found, as for the year ended June 30, 1914, in the statistical table published on pg. 162 of our May issue.

The following information is given with respect to the Canadian lines:—

"The Quebec, Montreal and Southern Ry. Co. shows a decrease in operating revenues of \$8,835.17, as compared with previous year. The operating expenses decreased \$16,955.83. Income from hire of equipment increased \$11,514.33. The net income, not allowing for interest due the Delaware and Hudson Co., was \$149,051.37, an increase of \$19,758.62.

"The Napierville Junction Ry. Co. shows a decrease in operating revenues of \$14,668.78 from the previous year. Operating expenses increased \$11,816.45. Net income was \$24,858.11 or 4.14% on capital stock outstanding, a decrease of \$28,015.02, from the previous year. A dividend of 3% for the year ended Dec. 31, 1914, was declared. The freight revenue decreased \$23,019.77, while passenger revenue increased \$8,080.19. The latter increase was due to the inauguration of through passenger train service over the Napierville Junction Ry. between Montreal and points on the Delaware and Hudson Ry. The increase in expenses was due to increased maintenance and increased passenger train service. The cost of maintenance, while higher than the preceding year, was not abnormally high, inasmuch as during the first years of the company's existence the renewals were naturally relatively small."

The D. and H. Co. owns \$1,000,000 of stock in the Quebec, Montreal and Southern Ry. and \$600,000 stock in the Napierville Jct. Ry.

The Grand Trunk and G. T. Pacific Rys. are said to have over 1,200 men serving in the Canadian Overseas Expeditionary Forces. The secretaries to the President, E. J. Chamberlin and to Vice President H. G. Kelley, are among the number.

The Great Northern Ry. has removed its Vancouver, B. C., offices from 314 to 607 Hastings Street.



## Grand Trunk Pacific Railway Construction-

Ballasting is still in progress on the section of the main line between Skeena Crossing and New Hazelton, B. C. An additional train is to be put on the run between Edmonton, Alberta, and Prince Rupert, B. C., June 1, giving a tri-weekly service between these points.

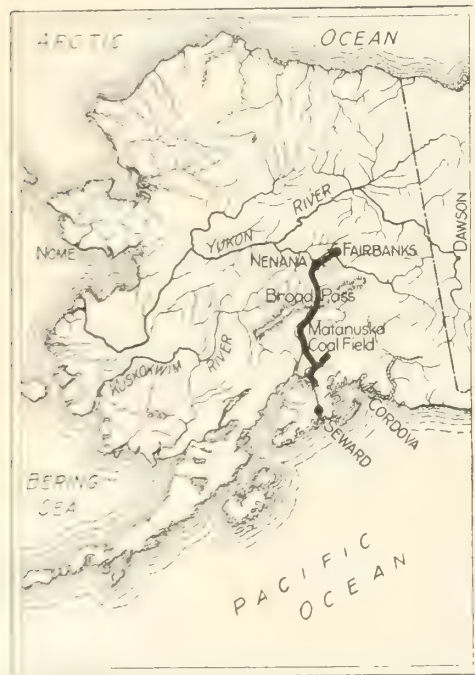
The last pontoon for the G. T. P. R. dry-dock at Prince Rupert was launched in April, and the dock is expected to be ready with a complete outfit with machinery for ship repairs by Aug. 1.

The fuel oil tank equipment at Prince Rupert has been completed and oil burning locomotives have commenced running.

Train service was resumed on the Regina-Yorkton-Canora branch May 15, and it is expected to place a train service in operation on the Weyburn branch of the Regina-International boundary line at an early date. (April, pg. 138.)

## U. S. Government Railway for Alaska.

The President of the United States has announced that the Seward-Fairbanks line, known sometimes as the Susitna route, had been selected for the Government railway to be built in Alaska under the \$35,000,000 appropriation of 1914. The route extends from Seward, on Resurrection Bay, to Fairbanks, on the Tanana River, 471 miles. It includes the existing Alaska Northern Rd., which runs from Seward through the Kenai Peninsula for 71 miles to Turnagain Arm. This branch is to be bought by the Government for \$1,150,000. From Turnagain Arm the route is to be extended through the



Route of United States Government Railway for Alaska.

The Alaska Northern Rd., extending north from Seward, is shown by a lighter line than the railway to be built by the Government.

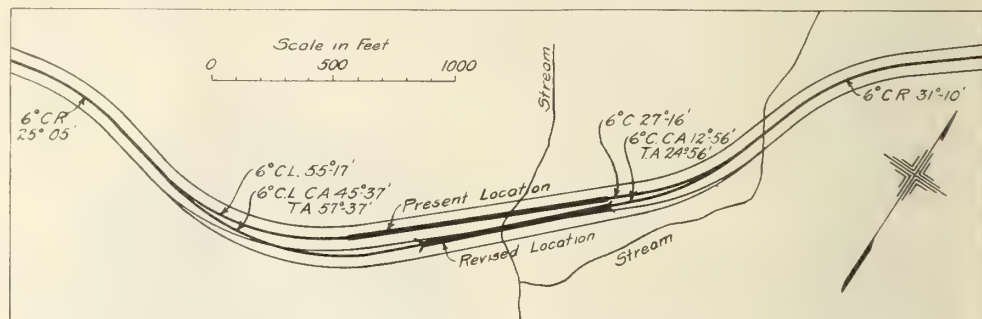
Susitna Valley and across Broad Pass to the Tanana River, and from there on to Fairbanks. It is to be a standard gauge road. A side line is to run from Matanuska Junction into the Matanuska coal field, 38 miles. The road is to be built with its present base at Ship Creek, on Cook's Inlet, and from this point it is expected that the Matanuska coal will be shipped during the greater portion of the year. The estimated cost of construction from Seward to

Fairbanks, including the Matanuska branch, is \$26,800,000.

W. C. Edes, of the Alaska Engineering Commission, has been designated chairman, to be in immediate charge of work and to have power of approval or disapproval of all administrative matters. Lieut. Mears and Mr. Riggs, the other members of the commission, have gone to Alaska to take up the construction and survey work.

## Algoma Central and Hudson Bay Railway Bridge at Bellevue.

The Algoma Central and Hudson Bay Ry. is about to replace the temporary bridge at Bellevue, 20.3 miles north of Sault Ste. Marie, by a permanent structure. The old bridge is a large timber structure of 79-14



Old and New Location A. C. & H. B. R. Bridge, Bellevue, Ont.

ft. spans or a total length of 1,104 ft. It was built in the winter of 1901-2 and contains approximately 1,500,000 ft. b. m. fir timber. It is especially well braced and is a fine piece of timber work. It spans a gully or coulee through which a small creek flows, hence the waterway is negligible.

The new bridge will be built alongside the old one by making a slight revision in the line. The structure will be 810 ft. long

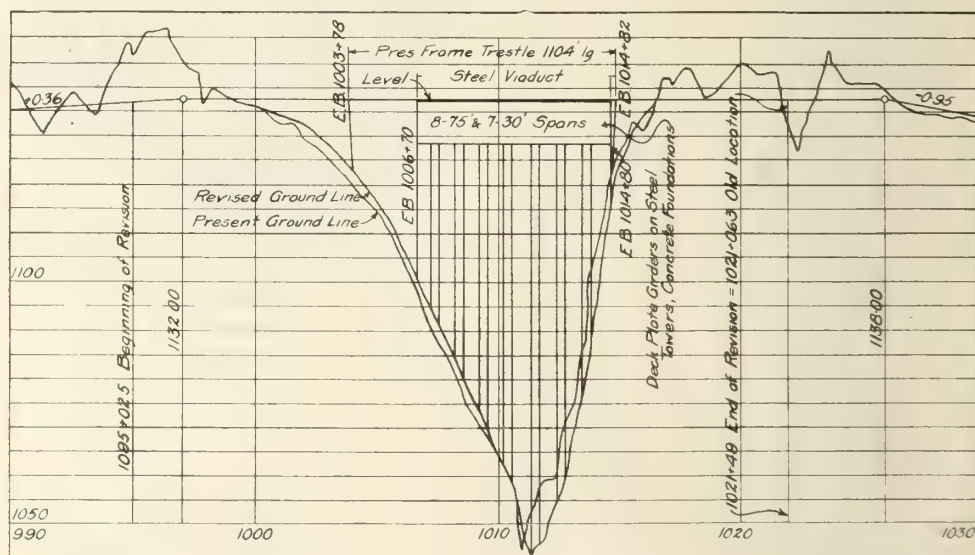
Engineer, A.C. & H.B.R., to whom we are indebted for this data. A contract has been let for the superstructure.

A 45° Triangle has been adopted as a badge by the Oregon Society of Engineers and its significance thus noted: Its three angles remind us of the client, the contractor and the engineer. The sides of the triangle are typical of right dealing. The two equal sides call attention to the fact that contractor and client have an equal claim on the knowledge, training and attention of the engineer. The right angle should be a constant reminder that each is entitled to a square deal.

The C.P.R. as Purchasing Agent for the Allies.— Press reports state that it is announced on good authority that the C.P.R.

Purchasing Department has been placed at the disposal of the Allied Governments, to act as purchasing agent on this continent for supplies of all kinds for war purposes. It was stated a few weeks ago that the City of New York sent representatives to Montreal to look into the C.P.R. purchasing system with a view to its adoption by the corporation.

Pacific Great Eastern Railway.—Van-



Condensed Profile Old and New Location A. C. & H. B. R. Bridge, Bellevue, Ont.

over all, composed of 8-75 ft. intermediate and 7-30 ft. tower deck girder spans supported upon trestle legs on concrete.

The north end of the new bridge will come opposite the 3rd bent from the north end of the present bridge, and the south end opposite the 18th bent, hence the new structure will be 294 ft. shorter than the old one. It will contain approximately 1,500,000 lbs. steel, and designed under Dominion Government specifications, class I.

The foundation work will be put in by company forces under the supervision of R. S. McCormick, M. Am. Soc. C.E., Chief

couver press dispatch May 25:—"Officials of the P. & E. R. announce that, through the Provincial and Dominion Governments, they have secured about \$3,000,000, with which to complete the line as far north as the Hundred-mile House in Cariboo, 223 miles from Vancouver. This work will occupy the company until the end of the year. The railway is in operation between Vancouver and Lillooet, 120 miles."

G. Marconi, the wireless telegraph inventor, left New York May 22 to give his services to the Italian Government in the war.



## Traffic Orders by the Board of Railway Commissioners.

### Express Merchandise, Receipts and Labelling.

General Order 144, April 29.—Re complaints by shippers against sec. 5, sub sec. (c) of the form of Express Merchandise and Receipt, and re labelling "prepaid" and "collect" packages: That sub-section (c) of sec. 5 of the "Terms and Conditions" endorsed on the Express Merchandise Receipt be amended by striking out the concluding words of the sub-section, reading "or from conditions beyond its control"; and by inserting as sub-section ("cc") the following:

"For any loss or damage caused by delay or by injury to or loss or destruction of the shipment, or any part thereof, from conditions beyond the control of the company, unless such loss or damage is caused by the negligence of the railway company upon whose trains or property the shipment was at the time such loss or damage occurred."

That express companies shall firmly affix a printed label to every shipment of goods received for carriage, which label shall indicate in conspicuous type whether the charges thereon have been prepaid, or are payable by the consignee. One such label affixed to any one package or article in a shipment composed of two or more packages or articles may suffice, provided that the label indicates the total number of packages or articles in the shipment. For "prepaid" shipments the label shall be printed in black on yellow paper. For "collect" shipments the label shall be printed in black on white paper. Permission of the consignee shall be obtained before the removal of any tag, wrapper, or portion of wrapper from any package or article for the purpose of verifying a "prepaid" label, or marks indicating prepayment, on a consignment billed "to collect."

And it is further ordered that General Order 142, April 17, be rescinded.

### Allowance for Car Doors for Lime Shipments.

The Board of Railway Commissioners for Canada, 23500, April 3.—Re complaint of Christie, Henderson & Co., Toronto, against refusal of G.T.R. to make an allowance for 296 doors furnished for cars of lime shipped from Galt, Ont. It is ordered that the complaint be dismissed.

### Manure Rates to St. Catharines.

23507, April 10.—Re complaint of W. H. Bunting, of St. Catharines, Ont., against increase by G.T.R. in the rates on manure, in carloads, from Toronto, for Canadian Northern delivery at St. Catharines, as published in G.T.R. Tariff, C.R.C. no. E-3035: It is ordered that the rate of 3½ cts. per 100 lbs. on manure from Toronto to St. Catharines for Canadian Northern Railway track delivery, shown in item 226 of said tariff, be disallowed; the rate of 2½ cts. per 100 lbs., previously in effect, to be restored, subject to a minimum carload weight of 60,000 lbs., and to the provisions of the General Inter-switching Order, no. 4988, July 8, 1908; the said changes to be made effective not later than April 21.

### Winter Rate on Unrossed Green Pulpwood.

23521, April 7.—Re application of E. W. Roberts, of Montreal, for a special winter rate on unrossed green pulpwood, which shall equal that applied on dry, peeled wood by applying the weight per cord of dry wood to the green wood: It is ordered that the application be refused.

### Freight on Malt Grain ex Fort William.

23536, April 10.—Re application of Sudbury Brewing & Malting Co. for an order directing the C.P.R. to apply the milling-in-transit privilege to the "malt grain" ex Fort William, which as "dried grain," or feed, is reshipped from the applicant company's

brewery at Sudbury, Ont.: It is ordered that the application be dismissed.

23572, April 21.—Re complaint of Cowichan Creamery Association, of Duncan, B.C., against rate charged by C.P.R. on alfalfa meal from Enderby to Duncan: It is ordered that the C.P.R. be directed forthwith to reduce its rate on alfalfa meal, in carloads, from Enderby, B.C., to Duncan, to 30 cts. per 100 lbs.

### Demurrage on Coal at Windsor, Ont.

23638, April 28.—Re application of J. H. Duthie, on behalf of the American Coal and Coke Co., for a re-hearing of the complaint that the Michigan Central Rd. has been holding cars for orders in its freight yards at Windsor, Ont., and has refused to bring coal into Detroit, Michigan, until such orders were received: It is ordered that the application for a re-hearing be dismissed.

## Great Northern Railway Lines in Canada.

Vancouver, Victoria and Eastern Ry. and Navigation Co.—The section of the line from Coalmount to Otter Creek was reported practically completed May 5, and preparations were being made for operation. The line is already in operation to Coalmount. The Kettle Valley Lines will connect up its traffic with the V. V. and E. Ry. at Princeton, between which point and Otter Creek the line will be operated as a joint section. The company does not propose to carry on any further construction at present as upon the completion of the Otter Creek-Hope section of the Kettle Valley Ry., it will be operated as a joint section, thus enabling the company to connect up with its New Westminster-Vancouver line.

Vancouver Terminals.—Work has been started at the False Creek flats in laying out the actual site of the terminal buildings. The city's committee has declined to grant the company's request for an extension of time for the completion of the buildings, but will not oppose any application on the company's part for an alteration in the location of the buildings nearer to the Canadian Northern Pacific Ry.'s terminal buildings. (May, pg. 179.)

## Dominion Government Railway to Hudson Bay.

In connection with the work on the terminals at Port Nelson, the Dominion Government steamship Minto, is expected to leave Halifax to place the buoys in Hudson Strait, and Bay. No further hydrographic survey work is to be carried on this season. Construction work on the terminals is to be pushed on rapidly during the season as it is expected that the grading gangs on the line from Pas, Man., will get through their work this season.

Work has started for the season at the several camps on the line, the work in progress ranging from "finishing up" at the Pas end, on clearing of right of way beyond mileage 393, the furthest out station.

The engineers at the different stations are:—Goose Lake, mileage 137, Division Engineer, W. J. D. Reed-Lewis; Resident engineers:—A. M. Hanson, A. McNaughten, and W. W. Christopherson. Landing River, mileage 280, No. 1:—Division Engineer, F. P. Moffatt; Resident engineers:—F. L. Lloyd, S. Hett, L. Johnson. No. 2:—Division Engineer, A. Timbrell; Resident engineers:—W. A. McCarthy, G. C. P. Montizambert, J. Strachan, Jr., and Kettle Rapids, mileage 332:—Division Engineer, L. F. Sil-

cox; Resident engineers, W. A. Hillman, J. S. Fraser, B. Henderson, F. E. Matthews. Kismagistakum, mileage 393:—Division Engineer, G. H. Parker; Resident engineers, H. McNeil, L. Easton. The staff at Pas consists of J. P. Gordon, Assistant Chief Engineer; T. B. Campbell, Division Engineer, and W. T. Jamieson, Resident Engineer. (May, pg. 183.)

## Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those for 1913-14, from July 1, 1914:

	Gross Earnings	Expenses	Net Earnings	Increase or Decrease
July	\$1,594,300	\$1,163,800	\$430,500	x \$8,800
Aug.	1,367,700	1,123,000	244,700	x 163,900
Sept.	2,109,000	1,519,000	590,700	65,800
Oct.	1,895,300	1,332,100	563,200	x440,900
Nov.	1,670,200	1,123,100	547,100	x417,700
Dec.	1,329,100	908,000	423,100	200,900
Jan.	950,800	773,000	177,800	x175,100
Feb.	1,105,100	823,700	281,400	42,800
Mar.	1,379,000	956,000	423,000	62,600
	\$13,401,400	\$8,719,900	\$3,681,500	x\$1,311,100
Decr.	\$4,392,400	\$3,081,300	\$1,311,100	.....

x Decrease.

Approximate earnings for April, \$1,421,000, against \$1,610,000 for Apr., 1914, and for 2 weeks ended May 14, \$546,200, against \$830,600 for same period 1914.

## Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1913-14, from July 1, 1914:

	Gross Earnings	Expenses	Net Earnings	Increase or Decrease
July	\$10,481,971.72	\$6,703,525.89	\$3,778,445.83	\$338,347.85
Aug.	8,917,764.38	6,554,606.68	3,373,157.70	597,081.54
Sept.	10,754,139.67	6,367,091.28	4,367,048.39	48,630.30
Oct.	9,282,928.49	5,361,600.13	3,921,328.36	2,281,529.43
Nov.	8,057,358.89	5,413,366.72	2,644,072.17	2,244,173.89
Dec.	7,443,962.43	5,244,438.62	2,199,523.81	2,027,297.90
Jan.	6,109,026.94	4,968,793.64	1,140,233.30	140,059.24
Feb.	6,735,678.49	4,756,663.87	1,879,014.62	507,438.16
Mar.	7,552,989.67	4,879,974.94	2,673,014.73	x19,224.14

\$76,635,820.68 \$50,869,981.77 \$25,765,838.91 x\$7,016,587.15

Dec. \$23,608,191.57 \$16,591,604.42 \$7,016,587.15

xDecrease.

Approximate earnings for April, \$7,164,000, against \$9,431,000 for April, 1914; and for 2 weeks ended May 14, \$3,198,000, against \$4,352,000 for same period 1914.

## Grand Trunk Railway Earnings, Etc.

The following figures show the earnings for the G.T.R. (including the Canada Atlantic Ry.), the G.T.W.R. and the D.G.H. & M.R. for March:

### Grand Trunk Railway.

Earnings	\$3,242,450
Expenses	2,419,800

Net earnings \$822,650

### Grand Trunk Western Railway.

Earnings	\$582,750
Expenses	573,800

Net earnings \$8,950

### Detroit, Grand Haven and Milwaukee Ry.

Earnings	\$188,000
Expenses	213,000

Deficit \$24,000

Approximate earnings for April \$4,005,778, against \$4,376,167 for Apr., 1914; and for 2 weeks ended May 14, \$1,785,301, against \$1,923,260 for same period 1914.

### Traffic Receipts of the System.

Aggregate from Jan. 1 to Mar. 31:

	1915	1914	Inc.	Dec.
G.T.R.	\$11,734,513	\$13,098,254	.....	\$1,363,741
G.T.W.R.	2,274,071	2,272,347	\$1,724	.....
D.G.H.&M.R.	757,343	751,222	6,121	.....
Totals	\$14,765,927	\$16,121,823	.....	\$1,355,896

## Grand Trunk Pacific Railway Earnings.

The approximate earnings of the Pacific Section and Lake Superior Branch, 1,194 miles, for April, were \$266,925, against \$193,144 for same period 1914, and the aggregate from Jan. 1 to Apr. 30 was \$1,177,156, against \$1,011,000 for same period 1914.



# Electric Railway Department

## Ontario Railway and Municipal Board Asserts Jurisdiction Over Hamilton, Grimsby and Beamsville Electric Railway.

The Ontario Railway and Municipal Board sat in Grimsby, Dec. 11, 1914, to hear a complaint by four residents of that place that there was a complete lack of conveniences on the company's property, no sanitary arrangements in the cars, and no signs showing sanitary conveniences in Grimsby, all of which was deemed a hardship, inasmuch as the end of the line at Hamilton was 23 miles distant, a ride of upwards of 1½ hour. The Board promised to look into the matter, and arranged with the company to have a conference Dec. 18. On the latter date, G. E. Waller, General Superintendent of Railways, Dominion Power and Transmission Co., which owns and operates the H.G. & B.E.R., represented the company before the Board, and the latter directed that the company, within one week, install signs at Grimsby station showing the location of the conveniences, the signs to be inspected by the Board's engineer. The Board also directed that following this the engineer would be directed to inspect and report on the conveniences in the cars. The company was also asked for suggestions for improvements, but none were at that time offered.

J. C. Royce, the Board's engineer, reported Jan. 26 that he had inspected the cars on the line, and that they had ample space for lavatories. He also reported that proper signs had not been put up in the Grimsby station, but was assured by the General Superintendent of Railways that the company intended improving the accommodations there, as well as the stations at Stoney Creek and Winona.

At a full session of the Board in Grimsby, Feb. 15, there were present, in addition to the original complainants, the clerks of Clinton, North Grimsby, Saltfleet and Barton Tps., and counsel for the company. The judgment given on that occasion directed the installment of conveniences on the cars, the plans and specifications for urinals and closets to be submitted by the company within 30 days, the plans to be prepared by the Board's engineer in the event of the company failing to do this. Station conveniences were also ordered, but judgment was reserved with regard to the open cars, pending the Board's consultation with its engineer.

The company's solicitors, Gibson, Levy and Gibson, Hamilton, telegraphed the Board, Feb. 17, to have the order stayed, following this with a letter, Feb. 20, asking for a rehearing on the ground that the Board had no jurisdiction to make the order. They claimed that for some time they had been considering the bringing together of all the Dominion Power and Transmission Co.'s railway lines under one jurisdiction, and that in planning for this, the status of the Hamilton, Grimsby and Beamsville Electric Ry. had been carefully investigated, and they claimed that it was a railway under the exclusive jurisdiction of the Board of Railway Commissioners for Canada. The Board appointed, Mar. 9, for hearing the points raised.

The company's solicitors based their claim on an order of the Railway Committee of the Privy Council, Jan. 28, 1895, which approved the place and mode of crossing of the G.T.R. by the company's line, and placed certain obligations on the company. Its counsel contended that by reason of the

fact that its railway crossed the G.T.R. under an order of the Privy Council, the company came exclusively under the jurisdiction of the Board of Railway Commissioners for Canada, as the Railway Act, 1888, sec. 306, declared that "each and every branch line or railway now or hereafter connecting with or crossing" certain specified lines of railway, including the G. T.R., "or any of them, is a work for the general advantage of Canada."

On April 7, the Chairman of the Board, D. M. McIntyre, gave the following judgment, which was concurred in:

This is an application under The Ontario Railway Act, sec. 255, for an order directing the company to provide sanitary conveniences on all its passenger cars. The respondent's railway is an electric railway laid in part on a private right of way but mainly on streets of the City of Hamilton and adjoining municipalities under agreements with them. The Board held a sitting at Grimsby on Feb. 15, for the purpose of taking evidence, and at its conclusion indicated that an order would issue as asked by the applicants. On Feb. 20, the company's solicitors wrote raising the question of the Board's jurisdiction to make the proposed order, on the ground that the railway was, for reasons set out in the letter, under the exclusive jurisdiction of the Parliament of Canada. Upon this the Board appointed Mar. 9 in Toronto for argument of the question so raised and notice of the appointment was given to all persons in interest. On the return of the appointment only the company was represented. It then appeared that the company was incorporated by an act of the Ontario Legislature, 1892, chap. 95. In the exercise of its corporate powers the respondent has constructed and is operating some 22 miles of railway from Hamilton to Beamsville through the Village of Grimsby. The railway is a purely local work or undertaking within the meaning of sec. 92, subsec. (10) of The British North America Act. It further appeared that by order of the Railway Committee of the Privy Council of Canada, dated Jan. 28, 1895, the committee approved of the place and mode of crossing by the respondents' railway, The Hamilton, Grimsby and Beamsville Electric Ry., of the G.T.R. on Main Street East, in Hamilton, as shown on plans on file with the committee. The crossing so approved was made shortly afterwards. Upon these facts it is contended by the respondent that after the crossing so approved was made its railway came under the exclusive jurisdiction of the Parliament of Canada by force of the provisions of sec. 306 and 307 of The Railway Act, as enacted in 1888, which are as follows:—

"306. The Intercolonial Ry., the Grand Trunk Ry., the North Shore Ry., the Northern Ry., the Hamilton and Northwestern Ry., the Canada Southern Ry., the Great Western Ry., the Credit Valley Ry., the Ontario and Quebec Ry., and the Canadian Pacific Ry. are hereby declared to be works for the general advantage of Canada, and each and every branch line or railway now or hereafter connecting with or crossing the said lines of railway, or any of them, is a work for the general advantage of Canada.

"307. Every such railway and branch line shall hereafter be subject to the legislative authority of the Parliament of Canada; but the provisions of any Act of the Legislature of any Province of Canada, passed prior to May 25, 1883, relating to any such railway or branch

line, and in force at that date, shall remain in force so far as they are consistent with any act of the Parliament of Canada passed after that date."

These sections were in force at the time the crossing was made pursuant to the Railway Committee's order and continued in force till 1903, when The Railway Act was revised and radical changes were made in the law. The Board cannot adopt the respondent's contention. A consideration of the provisions of the Railway Act, dealing specifically with railway crossings and junctions, as that act was at the time of the transactions in question, leads the Board to the conclusion that the words "Each and every branch line or railway now or hereafter connecting with or crossing the said lines of railway," as used in sec. 306, do not extend to and include street railways or electric railways constructed under provincial authority. To hold the contrary view would have consequences so far reaching, placing as it would, under Dominion jurisdiction, without enquiry or consideration of its special circumstances, every railway constructed under provincial authority which connected with or crossed a federal railway between 1888 and 1903, that the Board cannot adopt it without the most cogent and convincing proof that such was the intention of Parliament.

In the Railway Act of 1888 there is found a group of sections numbered 173 to 177, both inclusive, which deal with "Railway Crossings and Junctions." Sec. 173, as enacted by 56 Vic. Chap. 27, sec. 1, reads as follows:—

"173. The railway of any company shall not be crossed, intersected, joined or united by or with any other railway, nor shall any railway be intersected or crossed by any street railway, electric railway or tramway, whether constructed under Dominion or provincial or municipal authority, or otherwise, unless the place and mode of the proposed crossing, intersection, or junction or union, are first approved by the Railway Committee, on application therefor, of which application ten clear days' notice in writing shall be given by the party or company desiring the approval, such notice to be sent by mail addressed to the president, general manager, managing director, secretary, or superintendent of the company whose railway is to be so crossed, intersected, joined or united; and in the case of crossing by street railways, electric railways or tramways respectively, the Railway Committee shall have the same powers in all respects as to the protection of such crossing and otherwise as are given the Railway Committee by this Act in regard to one railway crossing another."

It must be concluded from this that it was in the contemplation of Parliament that "the railway of any company" that is, by force of the section defining the application of the act, the railway of a company within the legislative authority of the Parliament of Canada, might be crossed by either of two classes of works; first, by "any other railway," secondly, "by any street railway, electric railway or tramway, whether constructed under Dominion, provincial or municipal authority or otherwise." Clearly the words "the railway of any company shall not be crossed, by any other railway" did not, in the view of Parliament, include a crossing of a federal railway by a street railway or an electric railway constructed under provincial authority, otherwise the inclusion of the subsequent words dealing with such a crossing would be insensible. Furthermore, the concluding paragraph of sec. 173, defining the powers of the Railway Committee as to the



protection of crossings, leaves no room for doubt that Parliament differentiates between works designated by the unqualified term "railway" and those intended by the terms "street railway" and "electric railway" and treats the latter as in a class by themselves.

Sec. 177 of the above group of sections, which reads as below, shows that in legislating with reference to "Railway Crossings and Junctions," Parliament treated as generically distinct a railway company incorporated by the legislature of any province.

"177. Every railway company incorporated by any Act of the Legislature of any Province which crosses, intersects, joins or unites with any railway within the legislative authority of the Parliament of Canada, or which is crossed, or intersected by, or joined or united with any such railway shall, in respect of such crossing, intersection, junction and union, and all matters preliminary or incidental thereto, be deemed to be, and be, within the legislative authority of the Parliament of Canada, and subject in respect thereof to the provisions of this act."

Here Parliament assumes jurisdiction over a provincial company whose railway crosses or is crossed by a Dominion railway and defines the extent to which its jurisdictional status is affected thereby, and that is "in respect of such crossing \* \* \* and matters preliminary and incidental thereto." To that extent such provincial railway is declared to be subject to the provisions of the Railway Act of Canada, and applying the canon of interpretation *expressio unius est exclusio alterius*, we are warranted in concluding that to no greater extent is there any displacement of provincial by federal jurisdiction. It thus appears that when Parliament intended that its legislation in respect of "railway crossings and junctions" should apply to street railways, electric railways or railways constructed under provincial authority, it expressly mentioned them under such designation, and in the case of the latter defined the extent to which the provincial jurisdiction should be displaced by the paramount federal authority. The Board is not now concerned with the question as to how far such latter legislation is *intra vires* of the Dominion Parliament, in view of recent decisions by the court of last resort, but seeks merely to discover the expressed intention of Parliament.

When it is contended that secs. 306 and 307 of the Railway Act apply to the respondent's railway—an electric railway, a street railway, constructed under provincial authority—and that by reason of its crossing the G.T.R. in 1895 it thereafter became subject to the exclusive legislative authority of the Parliament of Canada, one searches these sections in vain for the above indicia of intention that they should have such an application. The words used in these sections are general and should not be extended in their application to cases already specially provided for unless an intention that this should be done is manifested in explicit language. In "Maxwell on the Interpretation of Statutes," 4th Ed., pgs. 263-4, the scope and method of application of the principle of interpretation here invoked is thus summarized: "A general later law does not abrogate an earlier special one by mere implication. Generalia specialibus non derogant: the law does not allow the exposition to revoke or alter by construction of general words any particular Statute where the words may have their proper operation without it. It is usually presumed to have only general cases in view and not particular cases which have been already otherwise provided for by the Special Act. \* \* \* Having already given its attention to the particular subject and provided for it, the Legislature is reasonably presumed not to intend to alter that special provision by a subsequent general enactment, unless that intention is

manifested in explicit language. \* \* \* The general statute is read as silently excluding from its operation the cases which have been provided for by the Special one." Although in the foregoing citation the above maxim is treated in its application to an earlier and a later statute—the one general and the other special—the principle of interpretation involved seems equally applicable when one is called upon to co-ordinate several provisions of the same statute, some special and others general. The Board is of opinion that secs. 306 and 307 do not apply to such a railway as the respondent's, with the result of placing it, for all purposes, under the legislative authority of the Parliament of Canada upon its crossing the G.T.R., but that the ultimate consequences to it of such crossing is defined in sec. 177 and as to all other matters than those there enumerated it continues under the legislative authority of the Province. As indicated at the hearing on Feb. 15, an order will issue directing the respondent to provide sanitary conveniences for the use of passengers on all its passenger cars.

An interesting discussion of the constitutional question arising on this application is to be found in the official report of House of Commons Debates, session 1906-7.

The Board was referred to the case, the G.T.R. Co. of Canada vs. Hamilton Radial Electric Ry. Co., 29 O. R., 143, decided in 1897. For the determination of the question arising in this action it was not necessary to do more than hold that jurisdiction to order the crossing of a Dominion by a provincial railway resided in the Railway Committee of the Privy Council of Canada. As to this there is no dispute, since such an order may be supported either by the express provisions of the Railway Act above considered or by the doctrine of incidental powers, elaborated by the court of last resort. The finding of the Board is, therefore, in accord with the decision of Mr. Justice Street so far as he was called upon to interpret this legislation by the precise issue before him.

On May 10 the Board ordered that the company file within 30 days complete plans and specifications for sanitary conveniences on its passenger cars and in its passenger station in Grimsby on the submission of which the Board will fix the time for completing the installation of the same. It is said that the H. G. & B. E. R. will appeal from the Board's decision.

### Morrisburg and Ottawa Electric Railway's Finances.

At a meeting of shareholders in Ottawa, May 1, a committee was appointed to take steps to appeal against an order of the county judge at Cornwall, Ont., calling upon the shareholders to pay up the calls on their shares, and to ascertain if the company cannot be wound up. It was stated at the meeting that \$78,000 had been paid up on the stock, that about \$68,000 was due on subscriptions, that of the \$78,000 only \$10,000 had been expended upon construction work in Metcalfe and Winchester townships, and that the balance had been expended in the maintenance of offices and the payment of salaries. The company's charter will expire in the course of a year or so, its application for an extension of time for construction having been refused at the Ontario Legislature's recent session. An opinion was expressed at the meeting that the surveys made and rights acquired under the charter might be taken over by the Hydro Electric Power Commission of Ontario, which was responsible for the Legislature's refusal of an extension of time, in connection with the plans for municipally owned electric lines. D. Fraser is Chair-

man, and Z. C. Ketchum, Secretary of the Committee. J. G. Kilt, President of the company, has been invited to give an explanation of its affairs to the committee before any definite action is taken.

In the 11 actions against shareholders at Cornwall, the county judge has given judgment for the amounts claimed. Seven writs were issued at Ottawa against other shareholders, and writs against at least 25 other shareholders are to be issued for the non-payment of instalments due. (Nov., 1914, pg. 576, and May, pg. 189.)

### Hydro Electric Power Commission of Ontario's Electric Railways.

Representatives of 15 municipalities met in Hamilton, May 12, and discussed the project for building under the electric railway powers vested in the Commission by the Ontario Legislature, lines from Hamilton to Port Dover, and from Hamilton to Guelph and on to Georgian Bay. The representatives formed an association with the title of the Greater Hamilton Hydro Electric Radial Union, with the following officers:—Honorary President, Sir Adam Beck; President, T. S. Morris, Hamilton; First Vice President, J. F. Vance, Waterdown; Second Vice President, J. A. Tooley, Cayuga; Secretary, C. Peebles, Hamilton. The meeting asked the Commission to immediately inquire into prospects and to give an estimate of the cost of a line from Hamilton to Port Dover.

The central association is the Ontario Hydro Electric Radial Association, and branch associations have now been formed at Toronto, Guelph, Waterloo, London, and Stratford, with others territorially described as the St. Lawrence-Trent Valley; the Brant; the Oxford; the Erie East; the Erie West; the Niagara; the Grey; the Bruce and Simcoe.

The proposed plan for financing construction is as follows:—When the report of the Commission is presented showing the cost, each municipality will vote on the question. If the plebiscite is carried by the people, each municipality will issue debentures covering the amount asked from it. These debentures will be placed with the Commission as security, but not sold. The Commission will then issue bonds covering the total debenture issue, and these will represent the money required for the construction of the electric lines. If at any time a road shows a loss from operation, the municipalities interested will be asked to forward equalized cheques covering the same, or, if so desired, may allow the sale of its debentures to the amount required. The bonds will be issued for 50 years and only interest and sinking fund will be paid during the first 10 years.

We are officially advised that the Commission's engineers are making surveys for an electric line from Hamilton to Niagara Falls.

A meeting held at Winchester, April 23, advocated the building of an electric railway between Ottawa and Morrisburg. E. G. Hewson, representing the Commission, explained what the municipalities had to do prior to the Commission undertaking any surveys, and steps were taken for the formation of a committee to represent the municipalities interested. The Gloucester Township Council passed a resolution, May 3, favoring the building of a line from Billings' Bridge into Morrisburg. (May, pages 185, 189 and 190.)

**Ottawa Electric Ry.**—Under the provisions of the mortgage trust deed of June 29, 1897, notice is given of the redemption of 15 debentures of \$1,000 each, on July 5.



## Reduction of Fares on British Columbia Electric Railway.

The B. C. Electric Ry. announced, May 3, that on and after May 11 it would offer a special non-transfer ticket, good only within the city limits of Vancouver and Victoria, at the rate of 8 for 25 cts. The issue of all types of tickets previously used by the company is being continued at the old rate to cover travel where transfers are demanded. These rates are straight 5 ct. fare, (a strip of 5 tickets for 25 cts. being provided for the accommodation of passengers); workmen's tickets at 10 for 40 cts., consisting of 5 white tickets, which can only be used before 8 a. m. and 5 green tickets which are good at any time, and the usual arrangement of school children's tickets at 10 for 25 cts. The new 8-for-25 cts. tickets are not good on any interurban car.

In connection with the introduction of its new special ticket the company decided to make it popular with the general public. As tickets were printed on cardboard of tango colour, the name tango ticket was chosen and an extensive publicity programme was carried on by the company during the week May 3-10 to bring this name before the public as well as impress upon them the benefits which would accrue to the travelling public from the standpoint of economy and the good to the city as a whole as a result of using tango tickets. Half page advertisements were taken throughout the week in all daily papers in Vancouver and Victoria as well as considerable space in weekly publications circulating throughout the cities. Extensive use was also made of news articles, written from a local standpoint, as to the advantages which the public would derive from the use of the tango ticket. One very striking illustration used in both advertisements and news articles pointed out that 32 rides at 5 cts. fare meant an expenditure of \$1.60, while 32 rides on tango tickets cost only \$1, the result being the saving to the individual of 60 cts. on an investment of \$1.

The company also inaugurated a word competition, prizes being offered both in Victoria and Vancouver, of \$50, the first prize \$20, and eight other prizes ranging down to \$2, for the largest lists of words which could be formed from the letters in the words tango ticket. Throughout the entire week every car in Vancouver and Victoria carried a striking fender sign noting the sale of tango tickets on May 10. Eight sheet posters were also displayed on billboards along the tram lines. As a result of the publicity methods adopted the words tango ticket became during the week the general talk of the public both in Vancouver and Victoria.

The company made May 10 known as tango ticket day in both cities where the new tickets are accepted. The conductors of each car wore white satin badges on which was printed in tango color "Ask me for tango tickets, 8 for 25 cts." Tango pennants, 12 by 16 ins. in size, on which was printed "Use Tango Tickets," were also floated from the trolley pole of each city car. One of the daily newspapers recognized the day as tango ticket day and offered to the readers of its Sunday issue prizes in a guessing contest as to the number of tango tickets which would be sold by the company on the first day of sale.

At a meeting of the Vancouver City Council, May 10, a protest against the new car tickets issued by the B. C. E. Ry. was made by the Auto Public Service Corporation. Alderman McLeath proposed to move a resolution that the Solicitor be instructed to notify the B. C. E. Ry. that in issuing tickets without transfers it is violating the terms and conditions of the agreement between the

city and the company. It is contended that secs. 11 and 12 of the agreement entitle every passenger to a transfer to a connecting car when a fare is paid. Objection was taken to the consideration of the resolution, and notice was therefore given that it would be brought forward at the next meeting.

In announcing the issue of the special tickets Geo. Kidd, General Manager, gave an interview to the local press. He stated that the serious decrease in the company's receipts made it necessary to choose between two alternatives, one was to reduce expenses by cutting down the service and the other was to endeavor to increase travel by lowering the fares. "It must be apparent to every citizen in Vancouver and Victoria," said Mr. Kidd, "that the service as present given cannot possibly be maintained with the present patronage. To cut down the service would have meant that a portion of our plant would be lying idle and a large number of men would have to be laid off, thereby adding to the number of unemployed in the city."

Mr. Kidd said it was impossible for anyone to predict with anything approaching accuracy the effect of an alteration in fares. Actual experience alone could give precise information, and it would depend largely on the increased use which the public would make of the cars to prove whether it was economically possible for the company to sell 8 tickets for 25 cts. If it can be done the B. C. Electric will do it.

"In adopting these low fares," he continued, "the company has not been influenced by the policy of other street railways in Canada or the United States, as shown by their attitude in dealing with the jitney problem. Many street railways in the United States, fortunately for them, are receiving assistance in solving their jitney problems by the strong action of the municipalities and state legislatures, in enacting special regulations to meet the dangerous conditions arising out of a new form of ill regulated and irresponsible competition. The B. C. E. R. Co. has taken no part in fostering an antagonism to the jitney, believing that the common sense of the citizens and the authorities will sooner or later result in adequate regulations being enforced. The public who ride in our street cars are protected by the most stringent regulations under the Tramway Inspection Act, and also by the terms of franchise granted to it in mutual good faith by the various municipalities, franchises which have always been liberally interpreted by the company. To give effect merely to these clauses in the Tramways Inspection Act alone, clauses devised for the protection and safety of the public, over \$300,000 have been spent by us in the last three years, a sum more than equal to the value of all the jitneys that are competing unfairly against us. To give, for example, a few of the Government regulations we are compelled to conform to—and, mind, I am not complaining about them—the type and design of the cars we use is controlled, their brakes and motors are all periodically rigidly inspected, their carrying capacity is limited, passengers are prohibited from riding upon the steps or fenders, gates must be provided to protect passengers against their own carelessness, all cars must have proper warning signals, and the movement of cars passing each other and following each other is regulated; automatic fenders must be provided, sign boards must be visible day and night, designating the exact route cars are to take, and in addition to these requirements our franchises call among many other heavy responsibilities, for a well-timed and

regulated service throughout the day over all routes, paying or non-paying, whether the traffic is light or heavy. Now contrast the exacting obligations we have to meet with the conditions prevailing upon our public thoroughfares today with the jitney service in its present unregulated condition, so that our streets are becoming a menace to every citizen, no matter whether he is a pedestrian, a patron of the jitney or of the car service. All the company asks is that it shall not be subject to unfair competition; we do not fear jitney competition; we have carried the public in Vancouver almost from the foundation of the city, through the many years of its wonderful progress, a progress in which the company has played a conspicuous part, and our business is to continue in bad times as well as in flourishing times, to satisfy the public in all its reasonable demands, and by acting fairly to it, we propose to continue as the transportation company throughout our territory."

"The unfair jitney competition," said Mr. Kidd, "the absence of even the most reasonable regulation of that extraordinary traffic, has certainly affected the credit of the company in the London money market, and until conditions improve any further expenditure on its tramway system will be altogether out of the question. In England the investing public is hard hit by the present war, and nothing would contribute more to maintain their confidence in British Columbia enterprises than strong and speedy action by the authorities resulting in regulations being passed placing the jitneys on the same competitive footing as the street car company. The successful future of the B. C. Electric Ry. and the cities of Vancouver, Victoria and the surrounding municipalities is so interwoven that the authorities and the company should co-operate for their mutual advantage and the benefit of the province. The company has a record to which it can point with pride as to its part in the development of British Columbia, and our desire is to still further that progress along sound economic lines."

"To come back again to the ticket question," Mr. Kidd added, "I have intimated that the reduction of fares is an experiment which we hope will be a success if our patrons give us their loyal support—this they have done for so many years, and if they will continue to do so, and also use their influence to prevent our competitors having unfair advantages—then Vancouver will be able to boast, and that boast will not be an idle one, that here we have the cheapest, safest, cleanest and quickest service in North America. The matter now rests with the public, who must be the final arbiters."

**Toronto-Hamilton Highway.**—The Hamilton, Ont., Board of Trade and representatives of various municipalities passed a resolution, April 29, asking for the building of a traffic bridge across the bay at the Hamilton end of the new Toronto-Hamilton highway. It is proposed that a double track line for electric railway traffic be laid on the bridge. The matter is to be discussed with the Commission which is building the highway.

**Toronto Civic Railway Car Barn.**—A temporary car barn has been erected by the Toronto Civic Ry. on its Bloor St. line between Dorval and Indian Roads, to accommodate the single truck cars now operating on that line. It is a frame structure, with a pit track, to accommodate two cars, and is 85 ft. by 21 ft. It is heated, and while small, will meet the present requirements of this short line.



## Electric Railway Projects, Construction, Betterments, Etc.

**British Columbia Electric Ry.**—In order to facilitate the laying the permanent track on Victoria Road, and the completion of the unfinished portion of the line on Main St., the South Vancouver, B.C., Town Council has offered to pave the centre strip and to lay the tracks. (May, pg. 190.)

**Hamilton, Ont.**—A press report states that there is some talk in the city as to the establishment of a cross town street car line "with flexible trolley poles and no tracks."

**London and Port Stanley Ry.**—The Board of Railway Commissioners will make an order granting the railway a strip of land owned by the G. T. R., along Bathurst St., London, Ont., from William to Richmond Streets for the purposes of the railway. The L. & P. S. R. has certain rights in the G. T. R. station, and it is said that an arrangement will be made between the G. T. R. and the London Railway Commission for an exchange of lands, which will give the city's electrified railway all that it desires, and at the same time enable the G. T. R. to make certain improvements on its line. The L. and P. S. R. will have its terminals on the south side of the G. T. R. station on Richmond St., independent of the G. T. R., and so situated as not to interfere with the projected elevation of its tracks.

P. Pocock, Vice Chairman of the London Railway Commission, stated recently that the work of electrifying the line was expected to be completed by the end of May, and the last of the rolling stock was expected to be delivered early in June. The construction of the terminals will not be a heavy piece of work.

In connection with the electrification of the line, a local press report stated that the Michigan Central Rd. was about to build a line west of its bridge in St. Thomas to connect with the London and Lake Erie Transportation Co.'s line, between London and Port Stanley, and run its traffic over that line instead of over the L. and P. S. R. We are officially advised that it is not proposed to build such a line, and London press reports state that the M. C. R. traffic will still be run over the L. and P. S. R. (Mar., pg. 190.)

**Moncton Tramways, Electricity and Gas Co.**—The Moncton, N.B., city council discussed with E. B. Reeser, General Manager, May 6, the proposed extension of the car line on Bonaccord St., but no decision was reached. (April, pg. 147.)

**Montreal Tramways Co.**—In the course of the discussion which has been going on at the meetings of the Board of Control for some months past, G. R. MacLeod, the city's railway engineer, reported May 6, that the cost of developing a system of 100 miles of street railway track, and 10 miles of subways by the city would be about \$49,000,000. He expressed the opinion that it would not be a good plan to enter into competition with the company; but it would be better for the city to buy out the company entirely. The details of the estimates are: "Surface lines, 100 miles, say \$3,000,000; four hundred cars, \$3,000,000; power houses, substations, etc., \$1,500,000; real estate for power stations, car houses, etc., \$2,000,000; probable cost of widening and extending streets, \$7,000,000; grade separations to cross railways, \$1,000,000—total \$19,000,000; while those for the subways are: Ten miles of subways, \$25,000,000; twenty miles of track complete, \$1,000,000; stations and terminals, say, \$2,000,000; electrical equipment, say \$2,000,000—total, \$39,000,000." An appendix gives a list of the probable routes, of the surface

lines and the subways. The discussion on the situation was further adjourned. (May, pg. 190.)

**Niagara Falls, Ont.**—A press report receives the report that the Ontario Department of Public Works has under consideration plans and specifications for an aerial railway over the whirlpool rapids. The report states that a private company desires to obtain such a franchise.

**Ottawa Electric Ry.**—We were officially advised, May 25, that it was expected that the city was to commence the renewal of the Bank St. pavement, between Gladstone Ave. and Sparks St., about one mile, about the end of the month. As this is one of the busiest streets in Ottawa, the O.E.R. has agreed to divert its cars during the progress of the work so that it can be rushed through in the shortest possible time. The rails to be used are of the Lorain girder section 115-462, and will be laid on an 8 in. concrete slab and the surfacing will be of creosoted wood block on the track allowance and asphalt between the tracks and the curbs. The work will be carried out by the Ottawa Construction Co., and it is expected that it will be continued night and day, and completed in about eight weeks.

**Pictou County Electric Co.**—We have been officially advised that the work on the extension from Posher's bridge to Parkdale, 0.50 mile, has been postponed for a few weeks. L. T. Flaherty, Stellarton, N.S., is Manager. (Mar., pg. 108.)

**Regina Municipal Ry.**—The Regina, Sask., City Council in its estimates for this year has authorized the expenditure of \$10,000 to build an extension of the Young St. line. The extension is to be made so as to connect the power house line with the C.P.R. Arcola branch to facilitate the haulage of coal. (Mar., pg. 108.)

**Sandwich, Windsor and Amherstburg Ry.**—We are officially advised, in connection with a recent press report that the company had offered to construct a belt line by way of Lincoln Road and Ottawa St., Walkerville, Ont., that the offer has not yet been accepted by the Town Council. The matter will have to be submitted to a vote of the people before anything is done. (May, pg. 190.)

**Sudbury and Copper Cliff Suburban Electric Ry.**—A local press report states that construction will be restarted on this line in Sudbury, Ont., early in June. All the grading has been completed, most of the ties have been placed, and some track has been laid. (Dec., 1914, pg. 555.)

**Three Rivers Traction Co.**—We are officially advised that the company has started construction on a circuit line in the city of Three Rivers, Que., and a suburban line to Cap de la Madeleine, a total length of about seven miles. The line in the city will traverse the principal business and residential sections and pass the C.P.R. station, the Richelieu and Ontario Navigation Co.'s wharf, and other public places. Part of the suburban line is not yet located but it will extend to Cap de la Madeleine near the Roman Catholic Church, and shrine, to which there is considerable pilgrimage traffic. The Union Bag and Paper Co. has a large mill in the same vicinity. The cars will touch all points on the city line and then proceed to Cap de la Madeleine. Sixty pound steel rails will be used; the overhead construction is to be part span work on the wider streets and bracket work on the narrower ones. The construction is in charge of J. C. Smith, Vice President, and is being done by the staff of the Shawinigan Water and Power Co.,

of which the company is a subsidiary. It is intended to complete the entire line as quickly as possible, and it is hoped to do so by Sept. 1. Power will be supplied by the Shawinigan Water and Power Co. and will be transmitted at 50,000 volts, and will be converted into direct current by means of motor generator sets in the Shawinigan Co.'s substation.

The company expects to purchase 8 cars of the p.a.y.e. type with the necessary plant for construction and snow cleaning.

The officers and directors are: President, T. McDougall; Vice President, J. C. Smith; Secretary-Treasurer, W. S. Hart, Montreal; other directors, J. Wilson, D. Murphy, Ottawa. (May, pg. 190.)

**Toronto Ry.**—Plans are being prepared, for the reconstruction of the College St. line from Bathurst St. westward. The eastern section has already been rebuilt.

The Ontario Railway and Municipal Board issued an order, April 26, directing the company to start construction of a double track line on Ossington Ave., from Bloor St. to Hallam St., along the latter street to Dufferin St., along that street to Lappin Ave., and along that avenue to a junction with the present line on Lansdowne Ave., and to complete it by Aug. 1. The Board's original order of Nov. 6, 1914, was that the line should be completed by June 1. The company argued for delay on account of the financial stringency, and the probable effect on its receipts by the jitney traffic. (Nov., 1914, pg. 517.)

**Toronto Suburban Ry. Co.** informed the Ontario Railway and Municipal Board, April 30, that if the city of Toronto desires to build car lines on Pacific Ave. and Annette St., within the old municipality of Toronto Junction, the company will abandon its charter rights to build on those streets. The matter is now before the City Council, and if the Council approves a bylaw will have to be submitted to provide funds for construction.

Track has been laid from Islington almost to the west bank of the Humber River, a temporary bridge having been erected over Mimico Creek. The piers and abutments for the bridge across the Humber River are practically completed, and it is expected that the steel work will be delivered early in June. Ballasting is being carried on along the line to Georgetown, and progress is being made with the electrical installation. Tracklaying and other work is being gone on with westerly of Georgetown. (May, pg. 190.)

**Western Canada Power Co.**—At the annual meeting, May 7, the capital stock was increased from \$5,000,000 to \$10,000,000, and a bylaw providing for the issue of part of the capital as preference stock was adopted. The retiring directors were re-elected with the exception of T. J. Drummond, Vice President, who had retired, C. C. Giles being elected to succeed him as a director. The directors subsequently re-elected C. H. Cahan as President, and elected A. R. Doble as Vice President in place of T. J. Drummond. The company has, in connection with its power plant, a railway in operation from Ruskin to Stave Falls, B.C., six miles, and owns the charter of the Burrard, Westminster Boundary Ry. and Navigation Co., which proposes to build electric railways centring in New Westminster.

**Winnipeg Electric Ry.**—The substation at Stony Mountain, Man., for the operation of the Winnipeg, Selkirk and Lake Winnipeg Ry.'s Stonewall branch, a subsidiary of the W. E. Ry., is reported to have been completed. The branch, 7.50 miles long, was opened for traffic Dec. 12, 1914, a temporary provision for power being made. (April, pg. 147.)



## Jitney Automobile Operation in Canada.

The jitney automobile service has now invaded a dozen or more places in Canada, the most extensive spread from the Pacific to the Atlantic coast in less than six months. With the exception of Sudbury, Ont., where construction has been started on an electric railway, the jitney comes in competition with an electric railway in each place, and in three places with those operated by municipalities. In every city where the jitney is in operation electric railway revenues are being affected, and the city councils are endeavoring to recoup themselves, either for the revenue lost on percentage of the street railway traffic, or of actual car revenue, by the license fee fixed for the jitneys.

The experience of United States cities is being reproduced in Canada, viz., that the jitney cannot operate profitably for a 5 cent fare on a longer route than 3 miles. The result of this is that there is talk of adopting a zone fare for electric railway service, which has hitherto been considered unnecessary, as it would have a tendency to concentrate instead of spreading out the population. The question of the permanence of the jitney service at all seasons of the year is being considered, and it is thought likely that with the coming of the winter, it will practically cease in Canada, with the probable exception of Pacific coast cities.

In Halifax, N.S., application has been made to the City Council for permission to license a jitney in the city and has been referred to the city solicitor to see whether it would interfere with the Halifax Electric Tramway Co.'s rights under its agreement with the city.

One jitney started operating in Sherbrooke, Que., April 15.

The number of jitneys being operated in Montreal is still limited, although it was reported, May 4, that 15 were being operated on the Park Ave. route alone. Another route has been opened up from Place d'Armes Square to Bernard St. The Manager of the Montreal Jitney Association is reported to have said that there was a difficulty in getting cars to put on routes which the public ask to have opened up. The Mayor has issued a statement in which he says that the citizens must be safeguarded against all dangers arising from the new form of traffic, and that the city's interest must be protected particularly against any loss of percentages receivable from the Montreal Tramways Co. A feature in connection with the traffic is the entry of 14 and 16 passenger jitney busses into the service, and the revival of the Canadian Autobus Co.'s plans. This company ran some experimental trips with a model autobus, May 3. It has a capacity of 40 to 45 passengers, and is stated to have been built to suit the conditions of Montreal traffic. The company has a franchise from the city to operate these vehicles, and has nothing to do with the "jitney" service. W. H. Dandurand is President of the Autobus Co.

In Ottawa one jitney started to run in the middle of April, it operated for one day, and nothing has been heard of it since.

The question of regulating the jitney traffic in Toronto was considered by the Police Commissioners and a bylaw is being prepared for regulating and controlling the traffic. In the meantime the police force is exercising control under the general traffic regulations. The traffic started Mar. 30, and on May 6 the Chief of Police reported that there were 150 jitneys in operation. This number has been increased since. Up to that date the principal traffic had been controlled by the Toronto Jitney Association, but since then the Independent Jitney Association has been organized, and by

May 18, it and the unorganized jitnies had practically driven the Toronto Jitney Association's cars off Yonge St., which is the most profitable route. The Toronto Jitney Association's cars are now operating on other routes, some cross town ones having been opened up. In nearly every case the street car routes are being followed. The Toronto Ry.'s traffic being perceptibly affected, particularly on the Yonge St. route, which was probably the best paying one the company had. It is now possible to obtain a seat on any Yonge St. car at almost any time of the day. A service was started on Yonge St., north of the C.P.R. tracks, Mar. 30, to Glengrove, 2½ miles, at a 5 ct. fare, six tickets for 25 cts., and another to the Rosedale Golf Club, at a straight 10 ct. fare. This service competes with the Toronto and York Radial Ry.'s Metropolitan Division, on its most profitable section. Competing with the Toronto Suburban Ry. is a service operated by 10 cars from West Toronto to Lambton, two miles, at a 5 ct. fare, 6 tickets for 25 cts.

The Deputy Chief of Police of Hamilton, Ont., in conjunction with the Hamilton Jitney Association's officers, has drafted a set of regulations for the control of the jitney traffic in the city. These are under the consideration of the Police Commissioners and the city council. The question of putting a tax on the owners of cars is to be considered directly by the City Council, and the suggestion is made that \$5 a year for each passenger seat in each car be charged, the idea being to replace the revenue taken away from the city as a result of the inroad made on the Hamilton St. Ry.'s earnings by the jitney traffic. Prior to drawing up the regulations the police department made an investigation of the extent of the traffic, which showed that on May 10, between noon and 8 p.m., 651 jitneys stopped at the corner of King and James Streets. Pending the passing of the bylaw the police are inspecting all cars put into the service and are regulating the traffic. The routes operated over are practically the same as those of the street railway, with a 5 ct. fare and 6 tickets for 25 cts.

The jitney has not yet made its appearance in London, Ont., but the city council is being urged to give the matter consideration so as to be prepared to act promptly when any proposition is made for such a service.

G. Markes, who was a partner in a jitney service at Sudbury, is seeking a franchise for a similar service in Stratford, Ont., and the city council has granted a franchise to a local company with the title of Motor Busses, Limited, to operate a jitney service in the city. Nothing has as yet been done in the way of putting a service in operation.

A jitney service is being operated at Sudbury, Ont., where the construction of an electric railway has been started.

The Manitoba Public Utilities Commission has issued a memorandum to the different municipalities in which the Winnipeg Electric Ry. and its subsidiaries operate, referring to the applications being made for a reduction of fares on the lines, and intimating that if the municipalities do not put the jitney traffic under proper regulations the W. E. R. can no longer be expected to continue its progressive policy of extensions. In Winnipeg the jitney traffic, which began in the middle of February, now covers practically the whole of the city, there being according to late advices 480 cars in operation, the fares charged being 5 and 10 cts., according to the distance traversed. The Winnipeg Jitney Dispatch Service has been organized to give special and casual service to any point, at rates to be arranged be-

tween the driver and his customer. At a meeting of the Real Estate Exchange, May 6, E. Anderson addressed the members on transportation problems as affected by the jitney. He dealt with the topic first as affecting the public, and secondly as affecting the street railway. Rapid communication is the only way to build up a city, and this he pointed out, can only be regularly and properly given by an electric railway; the long haul resulting in a loss, which is only made up by the short haul traffic in the centre. The jitney can give a more attractive service in good weather during a certain period of the year in the short haul area, but at no time can it give a profitable or satisfactory service for the long haul.

There were about 10 jitneys being operated in Regina, Sask., May 10, the first car making its appearance April 28. The city is charging a license fee of \$25, but has under consideration a bylaw for the full regulation of the traffic. The Minister of Municipal Affairs has promised that a measure authorizing municipalities to make regulations to control the jitney traffic will be submitted at the legislature's current session.

The jitney is only being operated in one city in Alberta—Edmonton—but steps are being taken in Calgary by the city council to enact a bylaw so that the officers will be prepared to act promptly, when any move is made to start such a service there. The bylaw passed by the Edmonton City Council is given in another column. The owners of jitneys operating in the city are of opinion that the council has not the power to pass such a bylaw, and it is possible that a case will be taken before the courts to test its validity. The question of the acceptance of a personal bond instead of an insurance policy was referred to a committee for consideration, and on May 5, it was decided to suspend the operation of this clause to July 5, so as to permit the jitney owners to secure policies. Pending the hearing of a test case there has been a considerable decrease in the number of jitney cars being operated, licenses having been taken out only for the larger seated cars.

British Columbia was the first Province in which the jitney appeared, and it was the first to take definite steps for its control. It introduced an amendment into the Municipal Act, authorizing municipalities to make regulations for the Government licensing and regulating all motor vehicles operating within their bounds, and a section granting similar powers was introduced into the Vancouver Corporation Act. A summary of these provisions has already appeared in Canadian Railway and Marine World. There are at present about 300 cars being operated in Vancouver and vicinity, and about 125 in Victoria. The service given by them is as a rule in the well settled sections only, and mainly along the British Columbia Electric Ry.'s routes, a 5 ct. fare being charged. Between Vancouver and New Westminster the cars run along the paved highway, with a 25 ct. fare. The draft regulations drawn up under the terms of the act have been under consideration, and several modifications have been made in consequence of representations by the jitney associations. The regulations come into operation June 1.

The New Westminster, B.C., City Council has appointed a special committee to draw up regulations for the jitney traffic.

The Victoria Jitney Association has been formed with W. T. Scott as Traffic Manager. It is in correspondence with the Provincial Government as to the regulations to be made under the act, and has appointed a committee to investigate the question of accident insurance rates.



## Mainly About Electric Railway People.

**C. E. A. Carr**, Railway Supplies, etc., Toronto, formerly General Manager, Quebec Ry., Light and Power Co., received word, May 13, from Ottawa, that his son, C. C. Carr, had been wounded at Langemarck, and has since been listed as missing.

**City Engineer Arnold** has been appointed Superintendent of the Saskatoon, Sask., Municipal Ry. by the City Council, by a majority of one, for a trial period of two months. In accepting this additional work he expressed the opinion that an expert street railway man should be employed.

The Brantford, Ont., Municipal Railway Commissioners and the city council's hydro electric commissioners have had some meetings in reference to a merger of the working staff by the appointment as joint Manager of **L. G. Ireland**, now manager of the city's hydro electric plant. Our advices, May 19, pointed to the probability of Mr. Ireland being appointed joint manager by June 1.

**John G. Baukat**, who is acting as Manager, London (Ont.) Railway Commission, which is electrifying and which will operate the London & Port Stanley Ry. was, from 1898 to 1899 assistant engineer, in charge of power and equipment, Port Chester Ry., of Port Chester, N.Y.; 1899 to 1902 in General Electric Co.'s railway department, Schenectady, N.Y.; 1902 to 1905, Chief Engineer, Schenectady Ry., Schenectady, N.Y.; 1905 to 1909, Assistant Superintendent of Electrical Equipment, New York Central & Hudson River Rd.; for a short time Chief Engineer, Miami Valley Construction Co., New York, N.Y.; 1910 to 1911, Mechanical Engineer, Wilmington-Philadelphia Traction Co., Wilmington, Del.; 1911 to 1913, Superintendent of Equipment, Lehigh Valley Transit Co., Allentown, Pa. In 1913 he was appointed electrical engineer, National Steel Car Co., Hamilton, Ont., and in 1904 was appointed on the Hydro Electric Power Commission of Ontario's staff.

**Col. H. H. McLean, K.C., M.P.**, President, St. John Ry., who will command the New Brunswick and Nova Scotia regiments and the 41st and 42nd Quebec regiments in the third Canadian overseas contingent, was born at Fredericton, N.B., Mar. 22, 1855, and educated there. He became an attorney in 1876, a barrister in 1877, referee in equity in 1889, and a K.C. in 1899, and is considered one of the foremost commercial and shipping lawyers in the province. In addition to being President of the St. John Ry., he is, or has been, intimately connected with several other transportation companies and allied interests, including the Alexander Gibson Ry. and Manufacturing Co., New Brunswick Southern Ry., Fredericton Ry., Carleton Electric Light Co., Grand Falls Water Power and Boom Co., New Brunswick Ry., New Brunswick Fish and Game Co., Algonquin Hotel Co., St. Andrews Land Co., St. John Bridge and Ry. Extension Co., etc., and is connected in a legal capacity with the C.P.R., Dominion Express Co., Dominion Coal Co., Cumberland Ry. and Coal Co., Maine Central Rd., etc. He has been associated with the military since joining the volunteers during the Fenian raids, and became Captain and Adjutant of the 62nd St. John Fusiliers, and afterwards Lieutenant-Colonel commanding that corps until 1903, when he was appointed Commandant of the 12th Infantry Brigade, which position he held until 1911. He was promoted to Colonel in 1911, and raised the 28th New Brunswick Dragoons, to the command of which he was appointed. He was Captain and Adjutant of the provisional battalion from New Brunswick and Prince Edward Island for service during the northwest rebellion in 1885; Commandant of

the Bisley team in 1899; in command of all troops assembled at St. John, N.B., for the reception of the Duke and Duchess of Cornwall and York, now King and Queen, in 1901; and also in command of the Infantry Brigade at Halifax, N.S., for the same purpose; in command of the 7th Infantry Brigade, for the tercentenary celebrations at Quebec in 1908; in command of the Canadian contingent at the coronation of the King and Queen, London, Eng., in 1911. He is President of the New Brunswick Provincial Rifle Association and a member of the Canadian Council of the British Red Cross Society. In 1877, when there was a possibility of war between Great Britain and Russia, he raised a volunteer force of 100 men, for which he received the thanks of the War Office, and during the South African war he offered to raise a similar force, and was thanked by the general officer commanding. He holds the long service decoration, and was appointed an honorary aide de camp to the Governor General in 1910. He was appointed Vice Consul for the Argentine Republic in 1908, and since that year has represented Sunbury and Queens, N.B., in the House of Commons.

## Electric Railway Notes.

Moncton Tramways, Electricity & Gas Co., Moncton, N.B., is in the market for 2 or 3 one man, p.a.y.e., single end operation, single truck cars.

The Brantford Municipal Railway Commission has ordered three more single truck, p.a.y.e. cars from the Preston Car and Coach Co., for operation on the Eagle Place loop.

The London, Ont., City Council has passed a bylaw for the operation by the London St. Ry. of a Sunday service on the same terms and conditions as have heretofore prevailed.

The Winnipeg Electric Ry. has completed the new car signs which were directed by the Public Utilities Commissioner. The order necessitated, it is stated, the rearrangement of 380 signs.

The Three Rivers Traction Co., which is building a line in Three Rivers, Que., and a suburban line to Cap de la Madeleine, will probably order 8 single truck p.a.y.e. cars as well as the necessary construction and snow fighting outfit.

The Edmonton, Alberta, City Council has under consideration a recommendation of the finance committee that three business men of the city, not connected with the council, conduct a thorough investigation into the Edmonton Radial Ry.'s financial affairs.

The Ottawa Electric Ry. at the request of the Ottawa City Council began to stop its cars on the far side of the street, instead of the near side, April 29. This is a return to the old system, which was discontinued at the request of the City Council about two years ago.

The Saskatoon, Sask., City Council decided, May 7, to speed up the cars on the Municipal Ry. so as to give a faster service. The schedule adopted was drawn up by the Street Railway Men's Union, and laid before the council by City Engineer Archibald, who is also Superintendent of the Municipal Ry.

The Commissioners operating the Municipal Ry., and the Hydro Electric Power plant in Brantford, Ont., held a joint meeting, May 11, to discuss plans for placing these two utilities under one management, L. C. Ireland, the manager of the power distribution plant, being suggested for the joint office.

The Port Arthur Electric Ry., which is

owned and operated by the city, is hauling the city refuse from central points to outside dumps. A special car was built last year for the purpose. The experiment is being watched closely to see what comparison there is as to cost, with the previous system of hauling by horses.

Street cars in various parts of Great Britain and Ireland are being utilized to a considerable extent in a great recruiting campaign. They are decorated by artistically designed recruiting posters, and at night are illuminated by a large number of 16 c.p. colored lights. They are very attractive, and are said to be doing excellent work.

Representatives of rural municipalities of Manitoba served by interurban electric lines owned by the Winnipeg Electric Ry. met at Winnipeg, May 1, and passed resolutions asking for the provision of a freight and parcel station at the old market between Main and Princess Streets, and the granting of such franchise to the W. E. Ry. as would enable it to handle such traffic, from the interurban lines now having terminals at the north end city limits.

The Regina, Sask., Municipal Ry. put in operation a new time schedule, May 10, giving a faster service on all down town lines on week days. No change is made on two lines and the service on the Highland Park line has been discontinued. It is proposed to submit a bylaw at the first opportunity to see if a Sunday car service is wanted. The council refused to grant a request for a single fare for a return trip to the market on Wednesdays and Saturdays. Commissioner Reid pointed out that the Council received 4.2 cents from each passenger while it cost 4.8 cents each to carry them.

**Ejection of Passenger Justified.**—In the recent case of Capital Traction Co. vs. Brinley, decided by the Court of Appeals of the District of Columbia, U.S.A., it appeared that the appellee boarded a street car and tendered an overdue transfer to the conductor in payment of his fare. The conductor refused to accept the transfer, and informed the appellee that he would have to pay his fare or leave the car. The latter insisted that the transfer was all right, whereupon the conductor stopped the car and summoned the motorman for the purpose of removing the appellee from the car. The appellee then tendered payment of his fare, but the conductor refused to accept it and ejected the appellee, who brought action for wrongful ejection. The court, reversing a verdict judgment below, held that the appellee having voluntarily assumed the status of trespasser, his offer to pay his fare came too late, and that the trial court erred in not directing a verdict for the appellant.

**Edmonton Radial Ry. Depreciation.**—The Edmonton, Alta., City Council has been charging depreciation at 10% a year on the cost of the municipal railway's permanent track. It has been contended that this was altogether too high and the rate has been reduced to 6%. This will make a difference in operating charges that along with other things will enable the management to make a better showing, although the mileage of track is undoubtedly too large for the population, there being 54 miles and only about 62,000 people.

**London & Port Stanley Ry.**—J. G. Baukat, who has been on the Hydro Electric Power Commission of Ontario's staff for some time, has been sent to London, Ont., as acting Manager of the London & Port Stanley Ry. and is making preliminary arrangements for the organization of a staff to operate it after its re-opening in July as an electric line.



## Manitoba's Public Utility Commissioner Shows Why Electric Railways Cannot be Extended or Fares Reduced.

The Public Utility Commissioner of Manitoba, H. A. Robson, has issued a memorandum to the City of Winnipeg and surrounding municipalities stating why he cannot order the extension of electric railway lines or the reduction of fares, as follows:

"Several applications have recently been made either for orders for street car extensions in and around Winnipeg or for reduction of fares. The proposed extensions include

"1. A line to Morse Place, i. e., the Johnson Ave. extension into Kildonan;

"2. An extension of the Sargent Ave. line through into St. James to make a belt line with Portage Ave.;

"3. A line to the St. Boniface stockyards;

"4. A line through the northwest part of the city to Brookside cemetery.

"The jurisdiction of the public utility commission, to order construction or impose penalties in the alternative depends on the presence of certain facts—1, A contract requiring the company to build, or 2,—the extension to such an extent of business that a fair return on the capital investment is assured.

"New lines in the city may be required under the company's franchise, if a certain population exists in the territory to be served. Otherwise the obligation to build depends on condition 2 above. Suburban lines also generally depend on condition 2.

"In the city, the company has built many lines at the request of the council, without the lines being within the stipulation as to population. Several useful lines now in operation would not have existed but for this voluntary construction. Rural lines have been built on the assumption that they would so increase population thereon as to justify the investment. There are instances where it is obvious that this expectation has not yet been realized.

"The street railway company in ordinary times, and particularly before recent competition, was making such earning that it might carry further financial load and still ensure a fair return upon the value of the undertaking. But from the figures showing the reductions, due somewhat no doubt to financial depression, but primarily to the automobile competition, there is not now such a revenue that a fair return on the value of the property exists.

"There is evidently no contractual obligation to build the new lines, and because of the shrinkage just referred to the obligation under the law does not exist. So that nothing can be done in present circumstances towards enforcing the construction of these new lines.

"A few words may be added to elaborate the situation. The automobile competition gets the patronage in the populous districts where the paying traffic is found. This factor has substantially depleted the revenues which have been carrying the system as a whole.

"The street railway company reaches the outskirts of the community, and takes the 'long haul.' It is common to all such systems that the outer traffic is carried on at a loss which is met by the productive lines in the settled districts. The short fare pays the loss on the long fare. For instance, the passenger from Trent Ave., Kildonan, to Deer Lodge, pays a fraction over 4 cts., or perhaps 3 cts. Other examples are to be found at all points. This is a loss, and is made up ordinarily by the greater number of more profitable short runs down town. If the down town business is taken away

or substantially reduced, the result is obvious. The compensation for the long haul is gone. The company cannot be required to build lines which cannot be operated out of their revenue. The remunerative down town business has enabled it to carry the investment and operate lines which would not carry themselves, and which otherwise would not have been built.

"Every season so far there has been a certain amount of new track laid and operated. This has largely been in comparatively unoccupied parts. City growth, like that of the country, follows transportation lines. The incentive to the company to build into new territory in the hope of recoupment with development has gone.

"The street railway will make the new community and the bus will take the business. The general revenues will not now carry losing lines as they have done heretofore. Street car fares to and from suburbs have already been materially reduced or wholly extinguished because of general profitability of the system as a whole. In so doing the company either voluntarily or by slight pressure departed from the rates to which it was entitled under its franchise contracts. At present the company may well say it cannot build new lines to open new districts, or communities or to accommodate workmen and industrial establishments, because the revenue in which they have been carrying such lines in the past has gone into other channels. It cost money in large sums to build roadbeds, lay tracks and equip railway systems. This money is borrowed and the charges met out of revenue. With the present encroachments on revenue street railway transportation companies are not likely to be able to borrow new capital or to pay the interest on it if they were.

"These are matters for thought by the municipal councils of the city and surrounding municipalities. Some expedient must be devised for the encouragement of continued building of electric railways through all parts of the whole large urban area of which Winnipeg is the head and centre. Without continuously increasing any reliable transportation lines these communities will stagnate. The movement to encourage market garden traffic is an evidence of this. Cheaper industrial sites can only be made available by transportation of a cheap and reliable kind.

Accordingly, while this state of affairs exists nothing can be done with existing applications for new lines or further reduction of fares. When circumstances are altered, and the company's financial returns improve, these matters may be brought up again for reconsideration."

**Vancouver Bridges burned.**—The Connaught bridge and the Granville St. bridge, Vancouver, B.C., owned by the city, were damaged by incendiary fires, April 28. These bridges cross False Creek in the vicinity of Cambie St.; the first named is 4,091 ft. long, of which 3,514 ft. consists of steel spans, while the second is 3,342 ft. long, of which 2,069 ft. consists of steel spans. The city engineer estimates that 650 ft. of the steel work of the Connaught bridge will have to be replaced at an estimated cost of from \$60,000 to \$100,000. The damage to the Granville St. bridge was confined to the floor, and is not large. Owing to the damage to the Connaught bridge the B. C. Electric Ry. has had to rearrange its Oak St. line traffic from Eburne to Hastings and Cambie Sts.

## Electric Railway Finance, Meetings, Etc.

### British Columbia Electric Ry., and allied companies.

	Feb. 1915	Feb. 1914	July 1, 1914 to Feb. 28, 1915	July 1, 1913 to Feb. 28, 1914
Gross earnings	\$558,512	\$704,003	\$5,197,906	\$6,034,831
Expenses	469,187	513,748	4,040,925	4,407,215
Net earnings	89,325	190,255	1,156,981	1,627,616

### Cape Breton Electric Co.

	Mar. 1915	Mar. 1914	July 1, 1914 to Mar. 31, 1915	July 1, 1913 to Mar. 31, 1914
Gross earnings	\$557,135	\$717,251	\$5,755,041	\$6,752,082
Expenses	484,565	516,007	4,525,490	4,924,213
Net earnings	72,570	201,244	1,229,551	1,828,869

### Detroit United Ry.—The proposal of the

Detroit, Mich., City Council to purchase the lines within the one fare zone for \$23,285,000 has been refused by the company, and a new proposition has been tentatively agreed upon. Under this the proposition to purchase will be submitted to the ratepayers, and if a favorable decision is given, the price will be fixed by the six circuit judges sitting in chancery. The manner in which payment is to be made is left open.

**Grand Valley Ry.**—The bondholders of the Grand Valley Ry. applied, April 12, at Osgoode Hall, Toronto, to reduce the amount of \$25,000 proposed to be paid to E. B. Stockdale, who was receiver during the liquidation proceedings. Judgment was reserved. The company's line was sold under liquidation proceedings to the City of Brantford, Ont.

**Hamilton St. Ry.**—The earnings upon which the percentage is payable to the city for the three months ended Mar. 31, were \$132,536.19 against \$148,292.50 in 1914, the percentage being \$10,602.90 against \$11,863.40. The decrease is stated to be accounted for by the depression, and "the manner in which the jitney traffic has cut into the company's earnings."

### London St. Ry.

	Mar. 1915	Mar. 1914	Jan. 1 to Mar. 31, 1915	Jan. 1 to Mar. 31, 1914
Gross earnings	\$32,227.12	\$28,964.40	\$92,074.50	\$83,214.62
Expenses	22,297.57	21,354.99	64,610.97	60,116.20
Net earnings	9,929.55	7,609.41	27,463.53	23,098.29

### Winnipeg Electric Ry.

	Feb. 1915	Feb. 1914	Jan. 1 to Feb. 28, 1915	Jan. 1 to Feb. 28, 1914
Gross earnings	\$314,658	\$350,977	\$665,340	\$733,648
Expenses	194,565	213,104	408,771	439,282
Net earnings	110,093	137,873	256,569	294,366

	Mar. 1915	Mar. 1914	Jan. 1 to Mar. 31, 1915	Jan. 1 to Mar. 31, 1914
Gross earnings	\$303,209	\$347,812	\$968,549	\$1,081,461
Expenses	197,050	206,393	605,820	645,676
Net earnings	106,159	141,419	362,729	435,785

### Toronto Ry., Toronto and York Radial Ry., and allied companies.

	Feb. 1915	Feb. 1914	Jan. 1 to Feb. 28, 1915	Jan. 1 to Feb. 28, 1914
Gross earnings	\$767,326	\$777,683	\$1,610,677	\$1,625,628
Expenses	411,833	400,357	852,333	840,694
Net earnings	355,493	377,326	758,344	784,934

	Mar. 1915	Mar. 1914	Jan. 1 to Mar. 31, 1915	Jan. 1 to Mar. 31, 1914
Gross earnings	\$820,750	\$836,328	\$2,431,427	\$2,461,956
Expenses	356,755	435,685	1,209,188	1,276,379
Net earnings	463,995	400,643	1,222,239	1,185,577

	1915	City percentage	1914	City percentage
Jan.	\$ 471,226.33	\$ 70,486.33	\$ 501,843.70	\$ 75,276.56
Feb.	440,313.95	67,047.09	461,074.45	72,059.90
Mar.	484,468.30	93,141.32	530,751.18	102,150.24
Apr.	467,701.62	93,540.32	501,435.10	100,287.02
	\$1,867,710.20	\$323,215.06	\$1,975,304.43	\$349,771.72

### GENERAL MANAGER WANTED

For a short, up-to-date Canadian electric railway handling heavy freight and passenger service. Must be a good executive man, familiar with freight tariffs, divisions, etc. Apply Box 26, Canadian Railway and Marine World, with record of experience and references.



## Niagara, St. Catharines and Toronto Railway Club.

The Niagara Central Club, consisting of employees of the Niagara, St. Catharines & Toronto Ry. and allied lines, has been organized with club rooms at St. Catharines. One, the N. S. C. & T. Ry., has taken a three years' lease of a very substantial two story brick house on the corner of St. Paul and Chestnut Streets, almost

bed rooms are only to be used on the written order of the Dispatcher or Superintendent.

The club has a membership of nearly 200 and the officers are as follows: President, E. F. Seixas, General Manager; Vice President, W. R. Robertson, Superintendent; Secretary-Treasurer, J. S. Sainsbury; Com-

Jitneys must not carry more passengers than are set out in the schedule in the by-law, namely: A car of an originally rated seating capacity of 5 passengers may take 8, including the driver; a rated 7-passenger car may take 11, including the driver, and cars above that size may take passengers 40% in addition to their seating capacity.

Right hand doors must be kept permanently fastened, and a seat permanently fixed thereto. No exception is made of left



Reading Room, Niagara Central Club.



Card Room, Niagara Central Club.

directly opposite the terminal station, and has furnished it completely. The employees have organized themselves into a club and with a small monthly subscription maintain the club house.

The main entrance is on St. Paul St. On the right of the entrance hall is a large comfortably furnished reading room which

mittee, A. F. McGill, R. Wilson, R. W. Robertson, H. Rule, J. Hurtubise. No reasonable expense has been spared by the company in the furnishing and the large attendance of members attests to their appreciation of the company's action in affording its employees a place of this character.

hand drive cars, for no person will be allowed to enter by the right hand side.

No person may enter or leave when a jitney is in motion.

Change making or fare collection while a jitney is moving is prohibited.

Jitneys may not stop for taking on or letting off passengers except within 2 ft. of the



Bed Room, Niagara Central Club.



Billiard Room, Niagara Central Club.

is supplied with daily papers, current periodicals, monthly magazines and technical journals. It also contains an upright piano and a Victrola. At the end of the hall is a pool and billiard room containing a modern combination table. Off this room are the lavatories, and coat room.

On the second floor is a small completely equipped writing room, a commodious card room, which is also equipped with several of the standard games, such as checkers, cribbage, crokinole, etc. There are also two completely furnished bed rooms for employees who are members of the club to use in case of late and special runs. The

### Jitney Automobile Regulations in Vancouver.

The Vancouver City Council has passed the following rules for the regulation of jitney automobile traffic:

Automobiles plying for hire are to be examined, and their drivers as to fitness for driving, by an inspector, and the city council will grant licenses on his recommendation. The jurisdiction of the chief constable was removed from the bylaw as being bad law, in the opinion of the city solicitor.

curb, and not nearer than 30 ft. from a street corner. Passengers in the front seat must not encroach upon the driver's 50% space.

Route signs must be displayed both front and rear in a way not obscuring the vision of the driver.

Non skid appliances are to be worn in wet weather.

A bond must be filed with the city indemnifying an owner or any number of owners joining together for \$1,000 for any individual injury, and for \$5,000 for any collective claims, such bond to be approved by the city council with the consent of the obligee.



## Dominion Power and Transmission Company's Annual Report.

Following are extracts from the report for the calendar year 1914. The directors regret that there has been an interruption of that onward progress which has characterized the company's record from its incorporation. Towards the middle of the year there seemed excellent prospects of a resumption of general business activity, but the declaration of war and its effects on general business have quite visibly affected this company's gross revenue for the full year. The closing down of factories has reduced considerably the power receipts, and the street railway traffic has fallen off to a marked extent, while the other railways also show some diminution of business. In view, however, of the wide spread and general derangement of business that has taken place, this company's position cannot but be regarded with considerable satisfaction. Bond interest and other overhead charges have been promptly met, and payments of bonds and on account of bond sinking funds have been made amounting for year to \$134,390.00. We have carried out the sound policy of setting apart 20% of our gross revenue for the exclusive purpose of renewals and maintenance, and after paying dividends during the year amounting to \$461,392.00 we are able to show a balance to the good of \$65,599.10.

After the commencement of the war the advisability of continuing the work on the new steam power station was very carefully considered, and it was decided that in view of the improbability of any absolute necessity for a further supply of power under existing conditions, and in view of the state of the money market the completion of the system might well be deferred for the time being. Considerable progress has been made, however, not only with the work on the site of the station, but with the boilers, turbines and electric equipment remaining in the manufacturing establishments of the contractors respectively. Payments amounting to \$402,254.60 have been made on this account. It will probably be advisable to complete the buildings and install the plant during the coming summer, so that there may be in readiness for operation at least one of two units before the approach of another winter.

The operations of the company in all its branches have during the year been carried on with almost absolute freedom from interruption and with satisfaction to customers. The directors look forward with great confidence to the company's future.

The statement appended to the report relates to the company's general operations and does not give separate information for the railways owned and operated, viz.—Hamilton St. Ry., Hamilton and Brantford Ry., Hamilton and Dundas Ry., Hamilton, Grimsby and Beamsville Electric Ry., and Hamilton Radial Ry.

The directors for the current year are:—J. R. Moodie, President; Jas. Dixon, Vice President; Jno. Knox, Treasurer; W. C. Hawkins, Managing Director and Secretary; W. Southam, Lloyd Harris, J. W. Sutherland and C. E. Neill. E. P. Coleman is General Manager.

**Montreal Railway Y. M. C. A.**—Following were the officers elected at the annual meeting in Montreal, May 7:—Chairman, C. Manning; Vice Chairman, H. A. White; Treasurer, A. A. Maver; Secretary, F. J. Fradd; Executive Committee: W. A. Kneeland, S. Dugh, D. A. Hinchlisse, J. Harrower, T. McHattie, F. W. Britton, W. J. Hyman. The reports spoke of the satisfactory work done during the year.

## New Cars for Toronto Railway.

At a sitting of the Ontario Railway and Municipal Board, Apr. 30, to consider plans for the 50 new cars which the Board had previously ordered the Toronto Ry. to build, it developed that the company had proceeded to build the cars without receiving the approval of the plans by the Board, as called for by the order for their construction. Two cars had already been built and placed in service, and 18 others were in various stages of construction. The Chairman, D. M. McIntyre, expressed surprise at the failure of the company to submit the plans, and stated that if the company built any cars it would do so at its own risk, in the event of the Board refusing to approve the design. The hearing was adjourned to May 17.

On the latter date, consideration was given to the above mentioned matter, and also an application from the Toronto Railway Employees' Union for the abolition of the running board on cars. D. W. Harvey, Assistant Engineer of Railways Department of Works, Toronto, submitted plans prepared in that department for the reconstruction of the present cars. The Chairman suggested that an order might be issued calling for nothing but closed cars, but reserved judgment for the present. For the 50 new cars called for as above, Mr. Harvey submitted plans for a new car of composite construction, for the consideration of which the company asked time. The Board decided to leave the consideration of the plans to its engineer, the city engineer and an official of the company.

## Lethbridge Municipal Railway Operating Results.

The Commissioner of Public Utilities, for the City of Lethbridge, Alta., has made the following report:

The year 1914 saw some radical changes in the operating of the municipal railway, notably the change to one man one car and the introduction of the straight 5 ct. fare. So far the one man one car has worked out satisfactorily and we have not had an accident that could be charged to one man operation; indeed from the standpoint of safety to the travelling public the cars are safer.

The 5 ct. fare has not been long enough in force for me to say with any degree of accuracy as to its effects but so far there has been no decrease in traffic. The revenue and expenditure was as follows:

	1913.	1914.
Expenditure .....	\$91,440 84	\$83,098 00
Revenue .....	60,609 62	46,053 56
Deficit .....	\$30,831 22	\$37,044 44
Passengers carried ....	1,420,011	1,054,848
Car miles .....	433,183	357,938
Revenue per car mile..	13.99c	12.87c
Total cost per car mile..	21.11c	23.22c
Passengers per car mile	3.28	2.94
Av. fare per passenger.	4.17c	4.21c

Taxes to the extent of \$5,518.81 were added to our expenses for 1914. The one man one car was put into operation on June 19 and the 5 ct. fare on Dec. 15, 1914. The position of inspector has been discontinued and the accountant is now doing the work. The sub-station operator is now helping the accountant to count tickets, thus enabling us to dispense with a clerk from the Treasurer's office.

The following is a comparison of the number of passengers carried per month and also the earnings per month for 1913 and 1914:

	Passengers.		Earnings.	
	1913.	1914.	1913.	1914.
Jan. ....	110,268	129,076	\$ 4,516 32	\$ 5,332 64
Feb. ....	107,529	112,657	4,409 62	4,610 34
Mar. ....	117,153	112,695	4,838 07	4,670 66

April .....	112,250	92,598	4,684 77	3,865 91
May .....	116,617	79,656	4,847 32	3,350 71
June .....	142,181	71,752	6,010 73	3,011 30
July .....	125,489	103,037	5,259 46	4,481 38
Aug. ....	119,419	70,478	5,000 72	2,991 81
Sept. ....	112,266	61,798	4,675 01	2,618 84
Oct. ....	113,724	67,477	4,715 42	2,857 77
Nov. ....	111,618	70,151	4,618 73	2,981 02
Dec. ....	131,497	83,473	5,469 25	3,723 68

	1,420,011	1,054,848	\$59,045 42	\$44,496 06
Advertisements and rentals			1,564 20	1,557 50

Total ..... \$60,609 62 \$46,053 56

The number of working hours per man per week was reduced to 54, thereby enabling me to put on two additional men.

The auditors' report gives the following figures:

Property at cost .....	\$354,238 72
Losses covered by debentures, including debenture discounts and losses on operating, 1912 and 1913 .....	93,938 77

## Franchise for Electric Railway in Transcona.

The Manitoba Legislature at its recent session passed an act respecting the town of Transcona, containing the following section:

"3. Upon a report from the Public Utility Commissioner that substantial default has been made and continues in the performance of his obligations regarding the same by the person to whom has been granted a right to construct railway tracks over and upon the streets and highways of the Town of Transcona, under the terms of any contract made and approved under the authority of sec. 2 of chap. 123 of the Statutes of Manitoba, 4 George V., the Lieutenant Governor in Council may revoke the approval given under said section, whereupon the grant by the said town, pursuant of such approval, shall be extinguished, and the town may, subject to the like approval, proceed to again exercise the power and authority vested in it by the said section."

The Public Utility Commissioner has reported as follows:

"That substantial default has been made and continues in the performance by John Henry Kern of his obligation regarding the construction of railway tracks over and upon the streets and highways of the Town of Transcona, under the terms of contract made and approved under the authority of sec. 2, chap. 123, of the Statutes of Manitoba, 4 George V."

On May 7 the Lieutenant Governor in Council revoked the approval of the Kern contract.

## Winnipeg Passes Bylaw to Secure Competent Jitney Drivers.

The Winnipeg City Council passed the following bylaw, April 19:—

"No license shall be issued for the operation upon the streets of the city of Winnipeg of a motor bus, automobile, or jitney, driven by gasoline or electricity, for hire, unless the applicant for such license shall produce a certificate from the Chief of Police of good character and shall have passed a satisfactory examination by those appointed by the city for that purpose, showing that he is capable and competent to operate a motor bus, automobile, jitney or other vehicle driven by gasoline or electricity, with safety and skill, and the License Department is hereby directed to ascertain if any parties operating such motor busses, automobiles, jitneys driven by gasoline or electricity, for hire, are competent, and if any such motor busses, automobiles, jitneys or other vehicles being operated for hire are found to be operated by incompetent drivers or chauffeurs or owners, then the licenses of such drivers, chauffeurs or owners shall be cancelled forthwith and shall not be restored until such drivers, chauffeurs or owners have passed an examination showing that they are capable and competent to operate such motor busses, automobiles, jitneys or other vehicles with safety and skill."



### Edmonton Bylaw to License Jitneys and Their Drivers.

The Edmonton, Alta., City Council passed the following bylaw to regulate the operation of jitney cars, effective April 26:—

1. For every car coming within the purview of the bylaw, an annual fee of \$10 for every seat (excluding the driver's seat), according to the seating capacity of the car as set forth in the application and in the license; the seating capacity being determined by the seating capacity for which car was made or sold, and in other cases determined by a measurement of 18 ins. for each passenger, a separate license being required for each car.

2. For every driver other than the licensed owner, an annual fee of \$5. In case any person applying for a jitney license under the provisions of this bylaw has obtained a license as a common carrier of passengers or for a vehicle for hire for the current year under the provisions of bylaw 523, the sum paid for such license shall be credited to the sum payable by the applicant under the provisions of this bylaw, and all licenses issued under this bylaw shall expire on the 31st day of December next succeeding the date of the issue of the same, and no deduction shall be made by reason of the license being issued after the 1st of January in this or any other year. Fares to be charged by every jitney car, route and destination thereof and the license number shall be displayed on a sign attached to the car while in operation in some prominent manner satisfactory to the Inspector of Licenses, and no person shall attach to any jitney car operating in the City of Edmonton any sign other than the sign required as above and by the Motor Vehicles Act, excepting that a banner may be carried on either side or both sides of the engine hood of such car, indicating any special direction of place to which such car is proceeding, such banner not to exceed 3 ft. in length or 16 ins. in width.

3. Every owner or driver operating a jitney car shall wear on the breast of his coat a button or tag which shall be issued by the License Inspector.

### Nipissing Central Railway Operation for 1913-14.

The annual report of the operations of the Nipissing Central Ry. by the Timiskaming and Northern Ontario Ry. Commission for the year ended Oct. 31, 1914, shows receipts from operation, \$107,666.07, and from operations other than transportation, \$886.60; total, \$108,552.67, against \$85,509.26 for the year ended Oct. 31, 1913. The expenditures were:—Maintenance of way and structures, \$12,974.22; maintenance of equipment, \$6,169.91; traffic expenses, \$722.24; transportation expenses, \$41,176.77; general expenses, \$22,007.08; total operating expenses, \$83,050.22; taxes, \$15; net revenue, \$25,487.45. Out of this \$25,000 was paid to the Treasurer of the Province of Ontario.

The general balance sheet shows liabilities of \$530,000 on account of capital stock; \$229,194.16 on account of advances received from the Timiskaming and Northern Ontario Ry., and \$13,257.65 for accounts payable and unclaimed wages, a total of \$772,451.81. The assets are \$799,849.78, viz.:—Valuation of road and equipment, \$369,632.28; townsite property, North Cobalt, \$245,160; working assets, \$30,328.72; deferred debit items, \$3,329.28; franchise, \$142,399.52. The difference of \$27,397.97 is carried in credit of profit and loss account.

The traffic statistics show:—Passenger

car hours, 2,419; passenger car miles, 25,756; total passengers carried, 135,451; average daily receipts, \$351.03; average receipts per car hour, \$4.07%; average receipts per car mile, .38¼ cts.; earnings per passenger, .07¼ cts.; freight car hours, 38; freight car miles, loaded, 118; freight car miles, empty, 64.

The total trackage operated is 19.93 miles, of which 4.92 miles of main line is owned by the company; 10.45 miles of main track is leased from the T. & N.O. Ry. (of which 5.28 miles is maintained by the company and 5.17 miles by the Commission); and 4.56 miles of company and private sidings and spurs. The rolling stock consists of 8 double end interurban type motor cars; one combined switching motor car and snow plough, and three flat work cars.

### Halifax Electric Tramways Co's. Report.

The report for the calendar year 1914 states that no extensive construction work was undertaken. The principal items of capital expenditure were the paving of Cogswell St., new equipment for cars, additions to incandescent and street lighting systems, and the installation in the power house of a new railway motor generator set, turbine feed pump and switchboard. In addition to expenditure for maintenance charged to operating expenses, a substantial sum was set aside for depreciation.

Owing, in large measure, to conditions resulting from the existing war, the earnings were not as large as might have been expected under normal conditions, but the directors feel that, all things considered, the results of the operations are satisfactory.

The receipts were:—Passenger earnings, \$319,880.53; electric light and power, \$254,045.19; gas department, \$64,678.87; miscellaneous, \$6,637.21. Total, \$645,241.80.

Disbursements were:—Operating expenses and taxes, \$375,423.64; interest on bonds, \$30,000; miscellaneous, \$1,004.22; dividends, \$112,000; balance to surplus account, \$126,813.94.

The surplus account at Dec. 31 was \$921,735.58.

Following are comparative statistics:—

	1914.	1913.
Passenger receipts ....	\$319,880.53	\$301,771.11
Per cent. operating expenses to income ....	58.62	56.36
Passengers carried ....	7,316,727	6,876,003
Car mileage .....	1,370,430	1,275,527

The directors, who were re-elected, are:—E. A. Robert, President; Hon. N. Curry, J. W. McConnell, O. E. Smith, Vice Presidents; W. G. Ross, F. H. Wilson, Sir F. W. Borden, H. H. Smith, W. M. P. Webster, J. A. Neville, J. E. Wood and P. J. McIntosh. J. W. Crosby is Manager.

### Toronto Railway Employees' Wages.

The agreement between the Toronto Ry. and its employees, which has been in effect for nearly three years, will expire in the middle of June, and the men have been meeting to decide on terms to be asked under a new agreement.

The wages under the present agreement are as follows:—Motormen and conductors, 23½ cts. an hour for first year; 25½ cts. second year; 27½ cts. thereafter, platform time, 6 days a week; 4 cts. an hour extra for Sunday work. The company pays half cost of uniforms for men in second year and supplies uniforms free to men over two years in service. Motor and truck repair men, who are employed six days a week, are paid at the same rate. Shed foremen get 27½ cts. an hour; assistants, 24½ cts.; car washers 23½ cts., but as the car washers are also shed men, they are really getting 24½ cts.

The business depression, which was accentuated by the war, and latterly the jitney competition, have adversely affected the earnings to such an extent that the management feels that instead of increasing wages, as some of the men seem to expect, they should be reduced as has been done in many manufacturing industries.

### Guelph Radial Railways Report for 1914.

Following are the financial statements for the calendar year 1914, of the Guelph Radial Ry., which is owned and operated by the City of Guelph, Ont.:—

ASSETS.		
Cash on hand .....	\$	111.55
Cash in bank .....		3,021.90
	\$	3,133.45
Accounts receivable .....		459.98
Line and equipment Jan. 1, 1914 .....		174,410.35
New equipment .....		15,695.00
Car barn building .....		4,136.01
New switches .....		1,177.50
Charter .....		289.90
Gas works siding .....		101.50
		195,810.26
Less sale of old engine, etc. ....		110.67
		195,699.59
Supplies on hand .....		3,204.59
Insurance premiums unexpired .....		465.71
		\$202,963.32

LIABILITIES.		
Power accounts payable .. \$	585.56	
Sundry accounts payable ..	222.82	
		\$808.38
Capital stock .....		169,870.00
Surplus profits .. \$19,863.95		
Less dividend .. 8,450.00		
		11,413.95
Profits for 1914 .. 8,450.00		
Depreciation reserve .....		19,863.95
		12,420.99
		\$202,963.32

EARNINGS.		
Passenger receipts .....	\$44,674.80	
Freight receipts .....	2,697.04	
Advertising .....	349.20	
Sale of power .....	40.00	
Rent .....	230.00	
Interest and discount .....	143.06	
Park receipts .....	95.45	
		\$48,229.55

EXPENDITURES.		
Passenger operating .....	\$11,948.07	
Freight operating .....	785.23	
Oil and waste .....	178.69	
Coal .....	498.90	
Painting .....	127.18	
Office salaries .....	1,603.83	
Stationery .....	103.35	
General expense .....	612.85	
Insurance .....	640.54	
Car barn maintenance and wages .....	5,831.75	
Track .....	4,624.49	
Line .....	416.45	
Power house .....	71.00	
Park expense .....	836.71	
Taxes .....	1,634.89	
Hotel taxes .....	19.00	
Power .....	6,373.67	
Legal expenses .....	101.17	
Injury and damage claims ..	887.90	
Bills receivable .....	15.00	
		\$37,912.67

Profit for year .....	11,216.88
Depreciation .....	2,766.88
Net profit .....	\$8,450.00

### Calgary Municipal Railway Earnings, Etc.

The results of operation for April, 1915, were as follows, compared with April, 1914:

	1915.	1914.
Revenue .....	\$44,298.72	\$43,746.00
Maintenance of Way and Structures .....	807.31	1,262.00
Maintenance of Equipment .....	2,495.06	6,274.21
Transportation .....	23,092.39	33,579.68
General Expenses .....	1,171.77	2,300.00
Total Operating Expenses .....	27,566.33	44,016.51
Balance Revenue over Expenses .....	16,732.39	13,210.01
Fixed Charges .....	16,696.67	15,125.67
Surplus for month (1915) ..	\$335.72	
Deficit for month (1914) ..		\$1,915.66



# Marine Department

## Construction of Car Ferry Terminal at Carleton Point, P. E. I.

Rapid progress is being made with the building of the car ferry terminal at Carleton Point, P.E.I., for the car ferry to be established by the Canadian Government Railways across Northumberland Strait. The mainland terminal will be located at Cape Tormentine, N.B. The two terminal sites were selected as the result of the investigations by the late A. K. Kirkpatrick, M.Can.Soc.C.E., into the best location for such a route, considering natural harbor conditions, ice formations, currents, tides and shifting of sand. This report appeared in full in Canadian Railway and Marine World for Oct., 1912.

The Carleton Point terminal will consist of a landing pier extending southerly from the shore for about 2,200 ft., beyond which there will be a breakwater 500 ft. long, with an opening 600 ft. wide, between which, with the harbor formed, will be dredged to a depth of 20 ft. An 8 ft. tide has to be contended with. The landing pier and breakwater will both be of the same general construction, consisting of a stone fill, faced on both sides with large stones, the outer end consisting of 9 concrete cribs, to form the landing stage. The inner end of the landing pier will have a top width of 20 ft. for about two thirds the length from the shore, widening to a maximum of about 80 ft. near the landing stage, where there will be several tracks. Only a single track will lead out the greater length of the pier. On the sea side there will be a stone parapet. The outer end of the pier will be 13 ft. above low water, rising from a point two thirds out from the shore, to an elevation of 19 ft. above high tide at the shore line. The outer end concrete cribs will be from 102 to 113 ft. long. There will be 5 at the outer end, with 4 forming the landing stage. The breakwater will consist of a stone core, with large stone facing, rising 15 ft. above low water, and 10 ft. wide at the top, located so as to protect the landing stage from southerly seas.

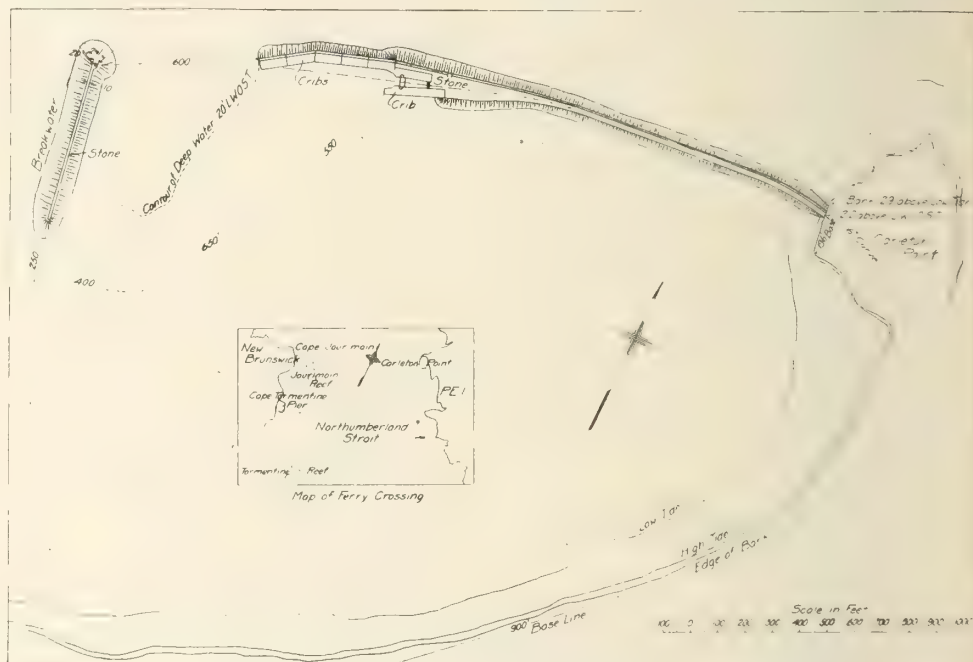
The completed work so far consists of the filling of the breakwater to low water level, as well as about 1,300 ft. of the landing pier completed to the same state. In addition, from 400 to 500 ft. of the outer end of this section of the landing pier has been filled to high tide level. The contractors, Roger Miller and Co., Toronto, have a very complete plant on the work, consisting of the plant on the site, a plant at Point du Chene, N.B., where the cribs are being built, and a quarry 5 miles back from the latter place on the Intercolonial Ry. Point du Chene Branch.

The quarry, which is on a siding about 1,000 ft. from the I.R.C. line, consists of a cutting at right angles to the siding, from which additional sidings have been laid into the working. The stripping involved the removal of about 8 ft. of red clay, which was accomplished by means of a steam shovel. The quarry face varied from 25 to 40 ft. in depth, and is about 300 ft. long. Back from the face, from 10 to 20 blast holes are drilled with a cyclone drill, and the whole face of 300 ft. blown out at one charge. The estimated quantity of stone released in a single blast is about 30,000 tons. This blasted stone is handled by a 60 ton steam shovel operating on a track parallel to the quarry face, into 6 yd. steel skips, 8 ft. square, placed on the flat cars. Paralleling the quarry face, and extending from the inner end of the quarry cut to

the outside of the main siding from the I. R.C., there is a 600 ft. span cableway, which picks up the big stones, and carries them out to the cars waiting on tracks paralleling the main siding. There are 40 steel frame flat cars in constant service. Each car holds 4 steel skips on its deck. The cableway towers are each mounted on 18 pairs of standard car wheels, which operate on short lengths of track at each end, so that the cableway may be moved in towards the quarry face as the cut progresses.

It is the intention to use a 25 ton locomotive crane in the quarry this summer for the removal of the larger facing stones, in addition to the cableway. This crane will operate on a track alongside the face opposite to that from which the core stone is being removed by the steam shovel. From the quarry the stone is taken over the I.R.C. to Point du Chene, a 100 ton I. R.C. locomotive working continuously. At

tion of the pier, 1,500 ft. from the shore, just back of the point where the concrete cribs will be located, there were placed two wooden cribs, 100 by 30 ft., end to end across the pier site, which were sunk in position. The backs of these two cribs were banked for 80 ft. with stone to protect them from the seas, the inner faces of the cribs being left open for the docking of the stone scows between the cribs and the shore on the protected side of the cribs. No stone was dumped in this vicinity, a clear length of about 150 ft. of the pier filling being left open. On this crib there was erected a 95 ft. tower, with a 105 ft. tower at the shore end of the pier. Between the piers there was suspended a cable. The scows towed across from Point du Chene are docked on the inner face of the cribs, and the steel skips lifted from the scows by the cableway, and run along to the desired dumping position. By this means the upper portion of the pier is being filled. In the



Site of Car Ferry Terminal at Carleton Point, P.E.I.

Point du Chene, the steel skips are lifted bodily from the flat cars by derricks along the wharf edge, and placed on scows for removal to the pier site at Carleton Point, a 40 mile tow.

Two methods for dumping the stone on the site have been employed. For the lower portion of the core fill, the stone at Point du Chene has been deposited from the steel skips into dump scows, towed to the site, and dumped in the required position. This method of conducting the work is possible up to the low water line, above which point it is impossible to float the scows at high tide. As noted above, most of this portion of the work is completed. For the upper fill portion, the steel skips have been loaded bodily on flat scows and towed to the site, where for the landing pier, the skips are lifted from the scows by an overhead cableway, carried out over the desired point, and dumped.

This landing pier cableway involved the installation of a considerable piece of plant. At the outer end of the filled por-

tion of the pier, 1,500 ft. from the shore, just back of the point where the concrete cribs will be located, there were placed two wooden cribs, 100 by 30 ft., end to end across the pier site, which were sunk in position. The backs of these two cribs were banked for 80 ft. with stone to protect them from the seas, the inner faces of the cribs being left open for the docking of the stone scows between the cribs and the shore on the protected side of the cribs. No stone was dumped in this vicinity, a clear length of about 150 ft. of the pier filling being left open. On this crib there was erected a 95 ft. tower, with a 105 ft. tower at the shore end of the pier. Between the piers there was suspended a cable. The scows towed across from Point du Chene are docked on the inner face of the cribs, and the steel skips lifted from the scows by the cableway, and run along to the desired dumping position. By this means the upper portion of the pier is being filled. In the

For transporting stone across from Point du Chene there have been in service 5 scows. Of these a large one, 125 x 34 ft., 12 ft. high, with a capacity for 1,000 tons, and equipped with a derrick, is to be used principally for transporting the large facing stones. For the lower core fill, there are two 120 x 35 ft., 13 ft. dump scows, with capacity for 850 tons. These two scows are being used for carrying the steel skips. In addition there are two deck scows, 100 x 30 ft., 8 ft. deep, for deck loads only. Three tugs are employed on the work, two for towing the scows across, and a third for assisting on the site. The largest, the J. O. Gravel, is a 100 ft. steel vessel, 12 ft. draught, equipped with a searchlight, and used in towing across. A smaller tug, the D. M. Fraser, is an 85 ft. vessel, with 9 ft.



draught, and is employed for work around Carleton Point.

For the building of the outer end pier cribs the company has built a wooden floating drydock, 125 x 47 ft., 12 ft. deep, at Point du Chene. This dock has a gate at one end, and the water entrance is controlled by valves. As it will not sink completely of its own weight, concrete weights have been added along the inside bottom edge, which will clear it from docked vessels. The outer end pier cribs will be of a reinforced concrete and wood construction, the bottom being of wood, with the sides, ends, inner walls and framing of reinforced concrete. The wooden bottoms were necessitated to float the cribs from Point du Chene where they are being built, to the dock site, as it was feared that a complete concrete crib would not clear bottom in the minimum water of 16 ft. These cribs are being partially completed in the drydock, and built up to height of about 15 ft., when the valves in the dock are opened, the crib floated out and completed. They will be towed over to the site when required.

The cribs for the outer tower of the cableway were also built in the drydock at Point du Chene. The first one was towed to the site in the drydock, the latter being submerged and the crib floated out at the site. This course was followed as it was feared that the crib might break up if any heavy weather was encountered on the tow across. The second crib was towed over alone, the journey across being successfully made. The largest scow, which is of steel frame construction, was also built at Point du Chene.

The connecting line of railway from the Prince Edward Island Ry. Cape Traverse Branch to the site at Carleton Point, about 2 miles, has been graded, and considerable of the track laid. Most of the line will be laid separately with the P.E.I.R. narrow gauge, (3½ ft.) the standard gauge line being only carried back about a mile from the Carleton Point terminal, where an interchange yard will be established in the meantime, though it is the intention to change the whole P.E.I.R. to standard gauge in order to have through traffic for lines on the mainland.

The engineer in charge for the Railway Department at both Carleton Point and Cape Tormentine, is F. B. Fripp, A.M.Con. Soc.C.E. A. B. Gibson is engineer for Roger Miller and Co., and we are indebted to him for the information on which this article is based.

### Railway Companies and the Operating of Steamboat Lines.

Washington, D.C., press dispatch, May 15.—“The application of certain railways to retain ownership or continue operation of boat lines on the great lakes, despite the prohibition in the Panama Canal Act, was denied to-day by the Interstate Commerce Commission. All the railways applying steamship properties under the new law must give up their boat lines by Dec. 1.

“This is the first case involving extensive which has been decided against the railways. The decision is regarded as of great importance to all the ports on the lakes which are reached both by boat and rail lines.

Steamship lines organized as separate corporations and named in the report are owned on the lakes by the Pennsylvania, New York Central, Lehigh Valley, Rutland, Erie and Grand Trunk Railways. They operate practically all over the lakes, but the principal traffic is in coal, ores and grain between Buffalo and the upper ports. The traffic in package freight also is considerable.

The Interstate Commerce Commission has, under the Panama Canal Act's provisions, authorized the following railway companies to continue their interests in steamship services:

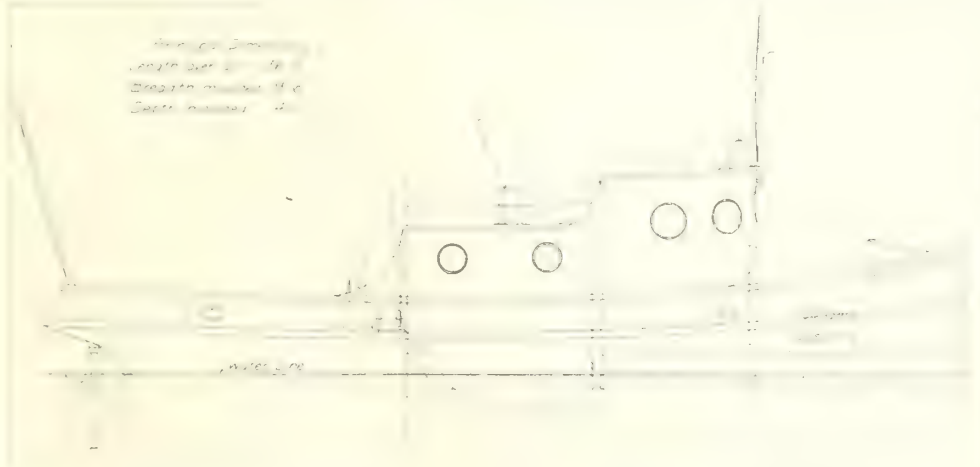
The Pennsylvania-Ontario Transportation Co.'s car ferry between Ashtabula, Ohio, and Port Burwell, Ont., in which the Canadian Pacific Ry. and the Pennsylvania Rd. are jointly interested.

The Grand Trunk Milwaukee Car Ferry Co., owned by G. T. Western Ry. Co.

The Ontario Car Ferry Co., between Charlotte, N.Y., and Cobourg, Ont., owned jointly by Grand Trunk Ry. and Buffalo, Rochester & Pittsburg Ry.

### Gasoline Tug and Lighters for Hudson's Bay Company.

The Hudson's Bay Co. is having a small gasoline tug and four lighters built for use in lightering vessels at Fort Churchill, the company's principal distributing centre on Hudson Bay. The accompanying illustration shows the elevation of the tug. It is a steel frame craft, with steel upper works and a wooden hull secured on the steel ribbing, which is made up of angles. It is provided with a wooden hull to facilitate beaching, as the provisions for keeping it in condition are necessarily limited at that far northern point. It has a length overall



Hudson Bay Co. Gasoline Engined Tug for Lightering on Hudson Bay.

of 36 ft., a moulded width of 9½ ft., 11 ft. over gunwales, and a moulded depth of 4 ft., drawing about 3 ft. of water. It is of the turtle back design, with the upper works protected by a conning hood at the front, and well enclosed to fit it for navigating the extremely rough waters that are frequently encountered in the shallow harbor at Fort Churchill. It has a 30 h.p. Buffalo gasoline engine, fuel for which will be carried in a 150 gal. tank placed forward. In the hold are two berths with lockers below. The hull is of 2 in. rock elm planking.

The lighters are of somewhat similar construction, a steel frame with 2 in. elm planking on the hull, and are 50 ft. long, 14 ft. beam and 6 ft. deep. They are open in the top, with no decking. Both the tug and lighters are being built by the Polson Iron Works, Toronto, and will be loaded on flat cars for transit to Montreal, where they will be transhipped by steamship, to Hudson's Bay. They are all nearing completion.

Dominion Government regulations regarding the exportation of grain, provide that no grain shall be exported to the United States except for domestic consumption; grain exported to the United Kingdom must be to a specified consignee, and if exported to foreign countries, a special permit must be obtained.

### Oregon Washington Railroad and Navigation Co's Ownership of Steamboats.

Upon application of the Oregon-Washington Rd. & Navigation Co. under sec. 5 of the Act to Regulate Commerce, as amended by sec. 11 of the Panama Canal Act, for an extension of time beyond July 1, 1914, during which petitioner may continue to operate boats on the Willamette and Columbia rivers, Lake Coeur d'Alene, and the Snake River, the Interstate Commerce Commission has held:

That the company does or may compete with its boats in their operations on the Willamette and Columbia rivers, Lake Coeur d'Alene, and the Snake River within the meaning of the act. That the operation of these boats is in the interest of the public and of advantage to the convenience and commerce of the people; that their continued operation by petitioner will neither exclude, prevent, nor reduce competition on the routes by water, and that the application should be granted. That the rates, fares, schedules, and regulations of these boats on the Columbia and Willamette rivers, on Lake Coeur d'Alene, and on the Snake River, governing traffic subject to the act, moved by them, must be filed with the Commission and posted to the public as required by the act and the Commission's rules and regulations.

### Canada Steamship Lines Rearrangement of Passenger Territory.

The following covers the territorial rearrangement of the Canada Steamship Lines' Passenger Traffic Department, for the current year, with the respective agents and locations:—

H. D. PATERSON, General Agent, Toronto, for Ontario, west of and including Kingston and Sharbot Lake, and also the City of Detroit, Mich.

W. F. CLONEY, General Agent, Rochester, N.Y., for New York Central line from Batavia, to, but not including Albany, N.Y., and south of N.Y.C. line, to and including Bethlehem, Scranton and Wilkesbarre, Pa., also including the City of Pittsburgh, Pa., and the middle southern States from Louisville, Ky., to New Orleans.

J. V. FOY, General Agent, Buffalo, N.Y., for the Lake Shore line, Buffalo, N.Y., to Toledo, Ohio, and the State of Ohio.

H. W. CRAWFORD, District Passenger Agent, Chicago, Ill., for the State of Michigan, City of Detroit excepted, middle western States as far as St. Paul, Minn., Omaha, Neb., and Kansas City, Mo., and Big Four line St. Louis, Mo., to Terre Haute, Ind., and territory inside these lines, also the States of Illinois and Indiana.



## Shipping Letters From the Head of the Lakes.

F. & W. Jones, Brokers, Fort William, Ont., have issued weekly letters as below: April 24.—The outlook for coal is not over bright. Five cargoes have arrived and four more are en route. None of the docks appear to have any definite advice as to the quantity of coal to be handled during the season, but it is generally conceded that the movement will be light. The C.P.R. expects to have about 125,000 tons of service coal arrive before September. We have no reliable information of any charters made for dealers' coal, but anticipate that at least 250,000 tons will be handled before autumn. Western rail shipments are very light, about 100 cars a day at all docks.

Navigation opened officially April 20. The accumulated stocks at all elevators then stood at approximately 17,000,000 bushels of all grains. Lake shipments from the opening to date have totalled 3,500,000 bush. and while being somewhat lower than the same period last year (4,837,479 bush.), can be considered as satisfactory. With car arrivals from the west the stocks at elevators now stand at 17,000,000. Forty-two vessels have loaded grain and cleared since the opening to date, six of them for Buffalo. Despatch in loading has been good, the stocks held well covered outbound shipments. It is expected that movement will continue active well into May, when a gradual decline in activity is looked for. Advises arriving from the west continue to be favorable to a large crop; the acreage under cultivation is estimated at an increase of 25% over 1913 and should expectations eventuate a crop is looked for available for lake shipments of about 350,000,000 bush. The present exceptionally favorable weather conditions, together with the large quantity of autumn plowing make an early crop most probable and in many places harvest is looked for from three to four weeks earlier than usual.

May 1.—Four coal cargoes have been unloaded this week—two in Canadian bottoms and 2 in U. S. Of these, only one was bituminous, the balance being anthracite and for dealers, no service coal has arrived to date. Four vessels are now under the rigs and 3m ore are en route. All docks have fair stocks on hand and are not in need of arrivals for immediate shipments. Western car shipments have been brisk, and in excess of last week's output. All the coal docks are in full working order, there has been no Sunday work and docks will only agree to do such extra work when it is absolutely necessary.

During the past week 5,217,497 bush. of grain have been shipped east, 14 in Canadian bottoms and 5 in U. S. Receipts have fallen off and stocks show a decrease of approximately 4,250,000 bush. compared with this time last year. Dispatch remains good, most vessels loading at two or three elevators. Weather conditions were unfavorable Thursday and Friday, a severe northwest gale with rain delaying movements around the harbor and necessitating the use of tugs. It is anticipated that shipments will remain steady during the first half of May and pick up again by July, when the start of an early crop is expected.

Stocks on hand at date, receipts and shipments during the week are as follows:

	Stocks.	Receipts.	Shipments.
Wheat .....	7,210,987	1,422,523	5,011,281
Oats .....	3,635,783	249,809	288,232
Barley .....	527,841	33,046	7,198
Flax .....	1,403,497	65,631	20,401

May 8.—Coal movement continues slow and with no immediate prospect of improvement in activity. Seven cargoes arrived during the week, two of which are still under the rigs. They are expected to be

unloaded on Sunday and Tuesday respectively. Four of the cargoes were bituminous coal, three anthracite, 4 were carried in Canadian bottoms and 4 in U. S. At time of writing there are advices of only one cargo being en route, and that for the Canadian Northern Coal Dock. Coal stocks are still very heavy, the western car shipments having shown considerable decline, in fact the western coal dealers are feeling the effect of the past trade depression equally with all other industries. The people of the western Provinces have undoubtedly utilized wood fuel wherever it could be secured, and in many instances have fallen back on the coal products of the west, although it is unquestionable that the western coal is very much inferior in quality to the eastern coal.

Shipment in grain has been fairly active, during the week there have been 32 vessels loaded and cleared with grain for eastern points, bringing up the total to 96 since the opening of navigation, 20 of which were billed to Buffalo. Stocks in elevators now stand at 10,220,478 bush. of all grades, showing a reduction on last week's stocks of 2,500,000 bush., after allowing for car arrivals from the west. Seeding in the western Provinces has made great headway and it is now estimated that at least 85% of it has been done. It is difficult to ascertain the exact amount of additional acreage put under cultivation, but it is certainly questionable whether it will reach previous estimates, it will probably not be 20% over the amount under cultivation in the season of 1914. The greater bulk of seeding now done is in wheat acreage and the prospects are that the acreage of oats, barley and flax which will be ultimately laid down, will be less rather than more than last season's acreage. The weather outlook is certainly good and taking into consideration the fine condition of the land on account of the autumn plowing, etc., should the present favorable conditions continue, there is every prospect for a large and good grade crop.

Stocks on hand at date, and receipts and shipments during the week:

	Stocks.	Receipts.	Shipments.
Wheat .....	5,097,160	951,034	3,064,861
Oats .....	3,177,493	278,481	737,769
Barley .....	530,979	53,155	50,017
Flax .....	1,414,846	58,766	47,417

May 14.—Only two cargoes of coal have been unloaded this week, one anthracite and one bituminous. There are no ships at the docks at present. Two are en route with coal, both being for the C.P.R. dock. The dock companies at these points expect a very slack season until July, but anticipate a considerable increase in coal arrivals beginning about the middle of July and continuing for the balance of the season. Western car shipments are still very light and stock piles are being reduced very slowly.

This week has seen a big drop in grain shipments, only 14 cargoes leaving these ports as against 32 last week. The shipments, which totalled 2,845,940 bush., show a decrease of over 1,000,000 bush. from last week's figures. Only one cargo, about 350,000 bush., went to Buffalo, the majority of the Canadian vessels discharging at Port Colborne. There is little prospect of any big increase in grain movement for some time, as grain shippers have sufficient grain in the east to fill all the present export demands, stocks of grain in eastern elevators at present being 4,081,757 bush. wheat; 1,830,821 bush. oats. The greatest bulk of this amount is in store at Montreal. Receipts from the west are steadily dropping off, this week's figures showing a decrease of over 140,000 bush. against those of last

week. Stocks on hand at date, and receipts and shipments during the week are:

	Stocks.	Receipts.	Shipments.
Wheat .....	4,060,880	867,685	1,903,965
Oats .....	2,369,789	164,178	971,882
Barley .....	497,230	25,890	59,638
Flax .....	1,434,188	44,068	24,726

## Coast, Lake and River Officers for 1915.

The following appointments, made by navigation companies engaged in Canadian navigation, for their various steam vessels and tugs for this year, have been reported to Canadian Railway and Marine World since those published in the April and May issues. The first column shows the names of the vessels, the second those of the captains and the third those of the chief engineers.

CANADA STEAMSHIP LINES LTD., MONTREAL		
A. E. McKinstry	A. E. Stinson	A. E. House
Aberdeen	N. Huggins	W. Malcolm
Acadian	P. McKay	C. Burton
Bickerdike	H. A. Leany	S. LaRue
C. A. Jacques	T. Johnson	F. Hamelin
Cadillac	T. D. Sullivan	A. S. Hawkins
Canadian	N. McKay	A. McLaren
Calgarian	R. F. Pyette	A. Black
City of Hamilton	O. Patenaude	W. Dungan
City of Ottawa	J. S. Moore	S. Murray
D. A. Gordon	H. J. Aickens	Jos. Kennedy
Donnacona	W. Blackler	D. McMillan
Doric	R. McIntyre	Jos. Aston
Dundee	R. N. Anderson	J. D. Andrews
Dunelm	G. W. Pearson	A. C. Leitch
Emperor		G. Smith
Empress of Fort		
William	N. McGlennon	
Empress of Midland	D. Burke	I. J. Boynton
Fairfax	M. Heffernon	C. LaVallee
Foronian	J. E. Mann	J. M. Kettles
Glenellah		J. H. McHattie
Haddington	R. J. Wilson	C. Lerche
Hamiltonian	A. B. McIntyre	A. E. Kennedy
Kenora	C. R. Albinson	F. Wilson
Martian	J. F. Davis	J. W. McLeod
Midland King	W. Anderson	Jas. McGregor
Midland Prince	Jas. Tyndall	J. A. Pickard
Nepawah	W. W. Allen	J. C. Carr
Rennville	A. McLelland	C. Holmes
Rosdale		T. H. Dryburgh
Stadacona	H. J. Page	W. W. Norcross
Strathcona	C. Dineen	Jas. Payne
Tagona		W. Taylor
W. Grant Morden	N. Campbell	R. Chalmers
Wahconah	Jas. Wilson	W. A. McLaren
Water Lily	D. McKivvers	R. Davis
Winona		J. J. Palmer

CANADIAN LAKE AND OCEAN NAVIGATION CO., TORONTO.		
Scottish Hero		H. C. Harrison
Turret Cape		J. J. Dove
Turret Court		J. S. Duguid

MERCHANTS MUTUAL LINE LTD., TORONTO		
A. E. Ames	W. Montgomery	L. McMillan
Beaverton	O. Patterson	H. Myler
H. M. Pellatt	J. Woolner	W. Harman
J. H. Plummer	J. L. Baxter	A. McCauley
Mapleton	W. J. Jewitt	E. Spenser
Saskatoon	N. Barrett	J. McKellar

NATIONAL STEAMSHIP CO. LTD., TORONTO		
Natironco		G. McDonald

TORONTO FERRY CO. LTD., TORONTO.		
Bluebell	D. J. Enright	J. Urquhart
Clark Bros.	T. W. Bryan	P. Kenney
Island Queen	W. Osborne	H. Dawson
Jasmine	J. Tynon	F. Rutherford
John Hanlan	A. Belrose	J. Thompson
Kathleen	M. Osbourne	J. Harrold
Luella	S. McCuaig	T. Whitty
Mayflower	J. Sixsmith	J. Cameron
Primrose	H. Dick	E. S. Berry
Trillium	R. Williams	J. W. Aston

TURRET CROWN LTD., TORONTO.		
Turret Crown	C. E. Sears	G. Campbell

JOHN WALTER, EDMONTON, ALTA.		
City of Edmonton	P. Christianson	
Seona		

The Empress of Ireland Disaster. The judgment of the Admiralty Court in the case of the C. P. R. against the owners of the s. s. Storstad for the loss of the Empress of Ireland, which was run down during a fog, in the St. Lawrence River, May 29, 1914, has been delivered in favor of the C. P. R. The amount of damages to be awarded is being gone into. The whole of the blame for the disaster was attributed to the first officer of the s. s. Storstad, for altering the course of the vessel during the fog. No blame whatever was attached to the officers and crew of the Empress of Ireland. The owners of the Storstad are appealing against this judgment.



### Grounding of the s.s. Glenmount.

An investigation was held at Kingston, Ont., May 7, into the Montreal Transportation Co.'s s.s. Glenmount touching ground near Gull Island shoal in the St. Lawrence River, Apr. 30, while in charge of F. Patenaude, an unlicensed pilot. It was shown in the evidence that the Glenmount was bound down from Kingston with grain and was drawing 13 ft. 7 ins. of water. The weather was overcast and dark just prior to the grounding, but was sufficiently clear to maintain full speed of 10 knots. The master, H. Peters, stated that as it is the custom with the firms navigating vessels in these waters to place a pilot on board who assumes control, in order that the master may obtain sufficient rest before resuming responsibility when working the vessel through the canals, he, following the custom of years, was not on the bridge, but was standing by his cabin door looking out, and owing to the fact that he was not conversant with the lights and buoys in that vicinity, and with the idea prevailing in his mind that the pilot was in charge and in full control, he did not take notice of things around. He practically stated that he would not care to interfere with the pilot unless he saw something radically wrong.

The pilot, F. Patenaude, who holds a master's certificate, but no pilot's license, stated that this was his first mishap in 30 years, and it was his first trip on the Glenmount. At the time of the accident he was alone on the bridge, the second officer having left the bridge some time previously. He did not enquire the speed of the vessel, and said that he never steered by compass, nor took any bearings, nor timed his actions in relation to the speed of the vessel.

The second officer, L. Dicks, stated that he possessed a mate's certificate for the coasting trade, and that prior to the accident he had left the bridge to give orders to the man on the lookout and did not return to the bridge until after the accident had occurred. He did not take any notice of the lights, being unfamiliar with the locality.

Following is the judgment delivered by Capt. L. A. Demers, Dominion Wreck Commissioner, concurred in by Capt. T. O'Connor and Jas. Murray, Kingston, Ont., as nautical assessors:

The court finds that, in view of the existing custom, whereby the owners of vessels plying between Kingston and Montreal order that a pilot, having no license as such, be sent to join the ship at Kingston, to assume full control of the navigation of the vessel, virtually relieving the master and officers of responsibility, in order that the master may be enabled to rest prior to assuming command when working his ship through the locks, this custom having prevailed from time immemorial, according to statements made by counsel, and the masters of ships having surrendered the control of the navigation of their vessels almost entirely, no blame can be attached to the master, Henry Peters, who is hereby exonerated. With regard to the second officer, his absence from the bridge, though it did not contribute to the grounding, is censured, especially in view of the information which the court has received, that officers have orders not to leave the bridge. With reference to the pilot, the court places the onus of this casualty on his shoulders. Knowing under what conditions he was engaged he should have taken every precaution, and unusual precautions in view of the condition of low water existing, a fact of which he was well aware. It is the court's opinion, however, that he has manifested an indifference by navigating only on assumption that the vessel had about covered the distance. Though lights were observable ahead and astern, no use whatever was made of those aids to navigation. We assume that it is not always possible to take compass bearings, but in this instance had it been done, it is unlikely that this casualty would have happened. Therefore, it is our opinion that the only conclusion we can arrive at is that the pilot, Frank Patenaude, carelessly navigated the vessel on this occasion. Having no license as pilot, and the court having no power to impose a fine, he not being on the articles as master or officer, and not being a licens-

ed pilot, his certificate as master cannot be dealt with. The mate's log was examined and found to be absolutely useless to impart information, and we would suggest that better supervision be exercised by the master with regard to the keeping of the log by the first mate, so that when it is required to substantiate statements which may be made, correct information may be found therein.

### Atlantic and Pacific Ocean Marine.

The Cunard Co. has chartered the British s.s. Earl of Forfar for freight service between Canada and Europe. She arrived at Montreal during May.

The s.s. Henriette Woermann, formerly owned by the Woermann Line, Hamburg, Germany, but which was captured off the west coast of Africa, early in the war, has been chartered to the Cunard Co., by the British Government, and is being operated between Liverpool and New York, under the name of Polymnia.

The Union Steamship Co. of New Zealand announces that it has purchased the steamships Canada Cape and Wyandotte, both being well known in Vancouver, for its freight service between Australasia and the Pacific coast. The names of the vessels have been changed to Waihenao and Waimarino respectively.

The first steamship to arrive at Montreal for the present St. Lawrence navigation season, from outside points, was the s.s. Thespis, under charter to the Dominion Government. She was from St. John, N.B., and arrived Apr. 30. The first trans-Atlantic vessel to arrive was the Thomson Line s.s. Jacona, from Newport, Eng., May 1, and the first trans-Atlantic passenger steamship, was the C.P.R. s.s. Metagama, which arrived May 2.

The C.P.R. is now issuing a new form of outward steamship ticket on its trans-Atlantic lines. One form is issued for all classes, instead of a separate form for each class as heretofore. Care has been taken to make the new form as simple as possible

### List of Steam Vessels Registered in Canada Jan. 1 to April 30, 1915.

No.	Name	Port of Registry	Where and When Built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Engines, Etc.	Owner or Managing Owner
119,063	Brit. Columbia	Vancouver, B.C.	Bowling, Scotland, 1903	170 7	27 1	10 5	557	222	81 sc.	Coast Steamship Co., Vancouver, B.C.
134,290	Cheslatta	Victoria, B.C.	Arrowhead, B.C., 1907	30 7	12 0	3 2	44	30	13 sc.	D.T. Hall, Hall's Landing, B.C.
134,552	Edward S.	Port Burwell, Ont.	Port Stanley, Ont., 1914	62 6	16 4	7 4	52	36	13 sc.	Smale, M.O., Malahide, Ont.
134,522	Njord	Sydney, N.S.	Arendale, Norway, 1889	152 7	30 5	17 2	523	254	70 sc.	Canadian Whaling Co., Seven Islands, Que.
134,285	Queen	Victoria, B.C.	N. Westminster, B.C., 1914	84 7	20 6	8 0	115	68	23 sc.	Queen City Trading and Transportation Co., Victoria, B.C.
134,258	Vaughan	Winnipeg, Man.	Selkirk, Man., 1914	82 7	19 3	9 0	134	91	20 sc.	Minister of Public Works, Ottawa
134,497	W. R. Charlton	Quebec, Que.	Sault au Mouton, Que., 1906	70 0	19 5	5 2	62	36	20 pa.	W.R. Charlton, Sault au Mouton, Que.

(1) Formerly Onyx

### List of Sailing Vessels and Barges Registered in Canada Jan. 1 to April 30, 1915.

No.	Name	Port of Registry	Rig	Where and When Built	Length	Breadth	Depth	Reg. Tons	Owner or Managing Owner
134482	Bilodeau L.	Montreal	Scow	Charlottetown, P.E.I. 1902	81 7	23 5	5 1	135	Quinlan & Robertson, Montreal
134368	Benjamin Harrison	Sorel, Que.	Barge	Mt. Cement, Mich. 1889	172 6	32 4	12 1	508	J. Guertin, St. Joseph de Sorel, Que.
134389	Buster	Sault Ste. Marie, Ont.	Scow	Victoria, B.C., 1913	90 0	30 0	6 5	317	Algoma Dredging Co., Sault Ste. Marie, Ont.
134287	C.L.C. No. 2	Victoria, B.C.	Barge	Cleveland, Ohio, 1913	75 0	28 0	6 5	113	Cameron Landers Co., Victoria, B.C.
134388	Continental	Sault Ste. Marie, Ont.	Dredge	St. Clair, Mich. 1880	71 0	28 0	7 5	309	Algoma Dredging Co., Sault Ste. Marie, Ont.
122584	Empire No. 1	Montreal	Barge	United States, 1901	170 0	31 5	12 4	518	Empire Coal Co., Montreal
134475	" 2	"	"	Northumberland, N.Y., 1901	95 8	17 5	7 2	126	"
134476	" 3	"	"	" 1901	97 3	17 7	7 4	126	"
134477	" 4	"	"	" 1911	97 2	17 8	7 1	124	"
134496	Grue No. 2	Quebec, Que.	"	" 1911	79 7	30 7	7 2	126	La Campagne de Sable Union, Quebec, Que.
134495	J.L.L. No. 9	"	"	" 1914	60 4	30 8	6 0	175	"
134402	Marijorie McGlashen	Lunenburg, N.S.	Schr.	Liverpool, N.S., 1915	113 7	26 1	10 6	109	W. Duff, M.O., Lunenburg, N.S.
134431	P.S. Co. XXIV	Vancouver, B.C.	Scow	N. Vancouver, B.C., 1915	67 0	24 0	5 5	186	Packers Steamship Co., Vancouver, B.C.
134457	R.M. Co. Dredge 10	Toronto	Dredge	Welland, Ont., 1914	107 0	36 0	8 0	386	Ramond MacDonald Co., Toronto
134454	Seventy-four	"	Scow	" 1914	83 0	34 9	7 5	143	G. Osler and G. H. Cassels, I. O., Toronto
134455	Seventy-five	"	"	" 1914	120 0	42 0	8 8	405	"
134456	Seventy-six	"	"	" 1914	64 0	34 0	4 0	113	"
134479	U. Marcotte	Montreal	"	Montreal, 1915	140 3	42 2	9 7	463	Quinlan & Robertson, Montreal
134561	W.M.R. No. 1	New Westminster, B.C.	"	N. Westminster B.C. 1912	78 0	28 0	7 0	453	Dominion Contracting Co., Vancouver, B.C.



under the many requirements of the Dominion and U. S. Governments, the accompanying regulations and the necessity for completeness in one ticket to cover all classes.

The Russian-American Line's s.s. *Czaritz* has been added to that company's service, and was announced to make her maiden trip to Archangel, Russia, May 22. She has recently been completed at Glasgow, Scotland, and is a twin screw vessel with quadruple expansion engines with a speed of about 18 knots an hour. She is a thoroughly up to date vessel with accommodation for about 60 first class, 350 second class and 1,400 third class passengers. Pickford and Black, Ltd., Halifax, N.S., act as Canadian agents.

The C.P.R. s.s. *Metagama* arrived at Quebec, May 1, and Montreal, May 2, being the first trans-Atlantic vessel to arrive at these ports for the present St. Lawrence navigation season. This was also the *Metagama's* first trip up the St. Lawrence, her maiden voyage to Canada having been made in April. Capt. Webster, who was in charge, was presented with an umbrella by the harbor master, on behalf of the Harbor Commissioners. The sailings of the steamships *Metagama* and *Missanabie* for May were cancelled, both vessels having been requisitioned by the Government. Passengers booked by these vessels were transferred to other lines.

### Maritime Provinces and Newfoundland.

Anthracite coal rates coastwise from New York to Maritime Province points are quoted as follows: To Halifax, \$1.25 and free discharge; to St. John, N.B., \$1.25; to Fredericton, \$2 to \$2.25; to Moncton, \$2 to \$2.25; to Dartmouth, \$1.47; Wolfville, \$1.50.

The Department of Public Works received tenders to May 20, for dredging at Buctouche Beach and Lower Derby Beach, N. B. One of the conditions on which any tenders are considered is that the dredges proposed to be employed on the work, shall have been registered in Canada prior to the sending in of the tender, or shall be built in Canada after the filing of the tender.

In addition to the vessels which Canada Steamship Lines, Ltd., has chartered out for the St. Lawrence Gulf, and coasting trade, as mentioned in previous issues, it has several which will make a few trips to Sydney, N.S., on a per trip basis. The charterers have the option of using any of the vessels on charter for the Gulf trade for trans-Atlantic service on increased payments, which have been arranged.

The C. P. R. is reported to have sold its s. s. *St. George*, to the British Government, by whom it is said, it will be used as a hospital vessel. The *St. George* was purchased, in 1913, from the Great Western Ry., of England, for operation on its Bay of Fundy service, between St. John, N. B., and Digby, N. S. For six years prior to the purchase, she had been operated by the G. W. R. between Rosslare, Ireland and Fishguard, Wales, in connection with the fast trans-Atlantic mail service to London. She was built at Birkenhead, Eng. in 1906, and is equipped with three sets of turbine engines, some renewal to which has been made since she has been on this side. Her dimensions are, length between perpendiculars 350 ft., breadth of beam 41 ft., depth moulded to main deck 17 ft. 8 ins., and to shelter deck 25 ft. 11 ins. On account of the vessel being built for short runs, the bunker capacity is limited, and when brought to Canada she was towed all the way. She sailed from St. John May 3 for England.

### Province of Quebec Marine.

An order in council has been passed continuing the pilotage laws for the pilotage district of Quebec, and repealing all previous bylaws.

The Public Works Department is receiving tenders for the construction of an extension to the training pier at Cap Chat, Gaspé county.

The Montreal Transportation Co.'s s.s. *Rosemount*, in passing through the Lachine Canal, May 3, carried away the lock gates at Cote St. Paul. They were replaced and traffic was resumed May 5.

The Quebec Board of Trade is negotiating with Canada Steamship Lines, Ltd., for the calling of the company's vessels at St. Pierre des Becquets, in Nicolet county, and if this can be arranged for the Dominion Government is to be urged to build a wharf there for the accommodation of the traffic.

The old lighthouse on White Head at Perce in the Gulf of St. Lawrence, is being replaced by a reinforced concrete structure, and while construction is proceeding a temporary fixed white light is being exhibited from an anchor lens lantern on a pole 20 ft. high set close to the site.

The small steamboat *Ludivica*, owned by H. T. LeBlanc, Tusket Wedge, N.S., is reported sold to the St. Simeon Lumber Co., St. Simeon, Que. She was built at Tusket Wedge in 1906, and is screw driven by engine of 6 n.h.p. Her dimensions are, length 45 ft., breadth 11.2 ft., depth 5.4 ft.; tonnage, 17 gross, 11 register.

Canada Steamship Lines s. s. *Louis Phillippe*, made her first trip in the ferry service between Montreal and Longueuil, May 1. She was built at Levis last year, her dimensions being, length 169½ ft., beam 43 ft. 2½ ins., depth moulded 12¼ ft. The propelling machinery was transferred from the company's s. s. *Dundurn*, which was dismantled.

The s.s. *Canada*, registered at Quebec, no. 117146, has had her name changed to *Percesien*. She is owned by the Gaspé and Baie des Chaleurs Steamship Co., Quebec, and appeared in Canadian Railway and Marine World's list of coast, lake and river officers for 1915, in the April issue, under the name *Acadian*, which it was first de-

cided to adopt. She was built in Scotland in 1892, and was then named *Pro Patria*.

The Quebec Harbor Commission is continuing the work of widening the Louise Embankment and deepening the St. Charles River, which was begun last year. The embankment will be widened about 300 ft. for about 1,300 ft. of its length. The crib foundations 200 by 60 ft. are being built at Indian Cove and floated down to the site on completion, and towed into position at high tide.

The steamboat *Christine*, formerly owned by Lord Strathcona, and now by J. S. Thom, Quebec, Que., and under charter to the Dominion Government for patrol purposes in the St. Lawrence River, was run down and sunk by an unknown steamship, off the Isle of Orleans, May 18, with the loss of eight out of a crew of 14. She was built at Glasgow, Scotland, in 1881, and was screw driven by engine of 40 n.h.p. Her dimensions were, length 126 ft., breadth 17.2 ft., depth 9.9 ft.; tonnage, 140 gross, 95 register.

Reports from New York state that a plot was being arranged there by some German subjects to purchase a steamship, load it with heavy ballast and cement, take it to the St. Lawrence on the excuse that it is to enter the Atlantic trade, and sink it at the narrowest part of the channel near Three Rivers, so as to effectually block the channel. Montreal shippers state that nothing has been heard of such a plot there, but it is stated that a German named Von Novelli, was in Montreal recently negotiating for the purchase of a vessel, but without success.

### Ontario and the Great Lakes.

Press reports from Hamilton state that the Public Works Department is arranging to make a complete survey of all the shores of Hamilton harbor.

The Algoma Steamship Line s. s. *J. Frater Taylor*, which grounded on Blake Point, Isle Royale, towards the end of April, was drydocked at Port Arthur during May, and had considerable repairs made.

The Imperial Oil Co. is reported to have placed an order at Collingwood, for the construction of a steam barge, to cost about

### Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during April.

ARTICLES		CANADIAN CANAL	U. S. CANAL	TOTAL
Copper .....	Eastbound			
Grain .....	"		5,749	5,749
Building stone .....	"	1,454,345	4,696,707	6,151,055
Flour .....	"			
Iron ore .....	"	41,880	263,490	305,370
Pig iron .....	"		411,845	411,845
Lumber .....	"			
Silver ore .....	"	4,641	907	5,548
Wheat .....	"	1,512,450	14,981,374	16,493,824
General merchandise .....	"	9,946	866	10,812
Passengers .....	"	35	32	67
Coal, hard .....	Westbound			
Coal, soft .....	"	8,459	121,652	130,111
Flour .....	"		149,455	149,455
Grain .....	"			
Manufactured iron .....	"			
Iron ore .....	"	120	8,460	8,580
Salt .....	"			
General merchandise .....	"	13,370	37,567	50,937
Passengers .....	"	11,599	37,368	48,967
Summary .....				
Vessel passages .....	Number	200	434	634
Registered tonnage .....	Net	192,553	1,041,292	1,233,845
Freight—Eastbound .....	Short tons	93,596	996,481	1,090,077
" —Westbound .....	"	22,088	322,570	344,658
Total freight .....	"	115,684	1,319,051	1,434,735

The Canadian Canal opened April 13, and the U.S. Canal, April 17.



\$200,000, for delivery in March, 1916, for use on the Upper Lakes and St. Lawrence route.

The Great Lakes Transportation Co.'s s.s. Glenfinnan while upbound with package freight, grounded on the Vidal shoals above the Sault locks on the Canadian side, Apr. 30, and had to have her cargo removed before being released.

A press report states that the Trent Valley Canal will probably be opened for traffic in the spring of 1916. It is stated that the opening would have taken place during the current year, but there are a quantity of obstructions yet to be removed.

The Owen Sound Board of Trade is negotiating with the Great Lakes Transportation Co., for one of the company's vessels to call there weekly. It is stated that if there is some guarantee of about 250 tons of freight weekly, a vessel will call there.

The Calvin Co., Kingston, Ont., is offering for sale, its s.s. Frontenac, which was built at Garden Island, Ont., in 1901. She is screw driven by engine of 75 n.h.p., and is of the following dimensions,—length 89 ft., breadth 21.8 ft., depth 7.8 ft.; tonnage 111 gross, 64 register, and has a draught of 7 ft. at the after end.

The steamboat Newminko, owned by W. Hanna and Co., Port Carling, was destroyed by fire there recently, the loss being estimated at \$12,000. She was built at Gravenhurst, Ont., in 1909, and was screw driven by engine of 13 n.h.p. Her dimensions were: length 84 ft., breadth 16.5 ft., depth 5.7 ft.; tonnage, 128 gross, 81 register.

The Merchants Mutual Line s.s. Mapieton when leaving the Welland Canal, Apr. 30, bound from Ashtabula, Ohio, to Quebec with coal, struck a submerged boulder, right in the channel about 800 ft. from the end of the pier. Temporary repairs were made and she proceeded on her voyage, and after unloading was to dry dock for examination.

The steamships F. M. Osborne and Valcartier, collided on the Corsica Shoal in Lake Huron, May 13, during a dense fog. Both vessels sank in 19 ft. of water and were reported to be resting on a good bottom, but considerably damaged. The F. M. Osborne is owned by the Davidson Steamship Co., Bay City, Mich., and the Valcartier, by Lake Commerce, Ltd., Toronto.

The Northern Navigation Co.'s s.s. Noronic, which was built at Port Arthur, had the following dimensions:—Length 362 ft., breadth 52 ft., depth 28¾ ft. Last autumn she was put in dock at Lorain, Ohio, and her beam increased 6 ft., giving her an increased speed of 1½ miles an hour and increased stability. She was given a test run May 6, which is said to have proved satisfactory.

The Department of Marine has authorized the change in the name of the s.s. Howard M. Hanna Jr., wrecked during the storm of 1913, to Glenshee. She was salvaged by the Reid Wrecking Co., Sarnia, and purchased from the underwriters, and after being repaired and refitted, was sold to the Great Lakes Transportation Co., being now operated on the Great Lakes with other of that company's vessels.

The s.s. Glenshee, formerly Howard M. Hanna Jr., made her first trip from the head of the lakes during the first week of May. She was one of the victims of the big storm of 1913, and was declared a total loss. She was subsequently salvaged, repaired and sold, not to Canada Steamship Lines, as stated in Toronto daily papers, but to the Great Lakes Transportation Co., of which Jas. Playfair is President and General Manager.

The Lake Simcoe Navigation Co. is operating the steamboats Monarch and Otonabee, this summer, on a daily schedule

from Barrie to Peninsular Park, Jackson's Point, etc., making connection at Barrie with G.T.R. trains. These vessels were purchased from the liquidator of the Peterborough and Lake Simcoe Navigation Co., and are owned by H. Waddington, Toronto. The head office of the company is at Toronto, and there is a local office at Barrie.

The U. S. Lake Survey reports the levels of the Great Lakes in feet above tidewater, for April, as follows,—Superior 601.34; Michigan and Huron 579.48; Erie 571.45; Ontario 245.04. Compared with the average April levels for the past ten years, Superior was 0.30 ft. below; Michigan and Huron 0.91 ft. below; Erie 0.97 ft. below, and Ontario 1.44 ft. below. It was anticipated that during May, Superior, Michigan and Huron would be 0.3 ft. higher, and Erie and Ontario 0.4 ft. higher.

The Algoma Central Steamship Line s. s. E. D. Carter is reported to have been sold to Boland and Cornelius, Buffalo, N. Y., for \$250,000. It is also stated that a contract for the carriage of ore and coal is included in the deal. She was built at Wyandotte, Mich., in 1906, and is of steel, equipped with triple expansion engines with cylinders 22½, 36 and 60 by 42 ins., supplied with steam by 2 Scotch boilers with induced draught. Her dimensions are, length 504 ft., breadth 54 ft., depth 30 ft.; tonnage, 6,359 gross, 5,063 register. She was purchased by the Algoma Central Steamship Line from E. D. Carter, Erie, Pa., about a year ago, for the same amount, it is said, as she is being sold for now.

The Marine Department has issued a warning to mariners relative to the use of the rifle ranges at Long Branch, near Toronto, and at Niagara on the Lake, where rifle practice is taking place. Owing to the extreme range of the rifles used, it has been found necessary to demarcate more clearly the area of water lakeward. At Long Branch seven spar buoys have been placed to mark the limits of the area likely to be struck by spent or ricochet bullets, 2,500 yards from the shore, and at Niagara on the Lake, seven spar buoys mark the area, from 1½ miles from Fort Massasauga at the mouth of the Niagara River, to 1½ miles north from the shore. Vessels should not cross the areas marked off when red flags are flying from the butts.

The s.s. Turret Chief, formerly owned by Canadian Lake and Ocean Navigation Co., and abandoned to the underwriters after being wrecked during the storm of Nov., 1913, on Lake Superior, is reported sold to A. B. Mackay, of Hamilton, Ont. She has been lying on the bottom at Port Arthur since she was salvaged, and it is stated that she is to be repaired and then placed in trans-Atlantic service. Reports state that she has been chartered for a trip from the head of the lakes to Great Britain, with grain. She was built at Sunderland, Eng., in 1896, and is of steel construction with double bottom for water ballast. She is equipped with triple expansion engines with cylinders 20, 34 and 57 by 39 ins. of 1,100 i.h.p., supplied with steam by two water tube boilers 12¼ by 10 ft., by Babcock and Wilcox. Her dimensions are, length 253 ft., breadth 44 ft., depth 19 ft. 7 ins.; tonnage, 1,881 gross, 1,197 register. She was operated in ocean service before being brought to the lakes.

The Wallaceburg Steamship Co., of which H. B. Smith is General Manager, has chartered the s.s. Olcott from the Peninsular Steamboat Co., Sandusky, Ohio, for operation on the Wallaceburg and Detroit route daily from June 10, during the summer. The Olcott was built at Toledo, Ohio, in 1901, when she was named Lakeside, and was lengthened in 1906 and renamed. She is of

steel construction with six bulkheads, four of which are watertight, steel boiler house, complete electric light plant, the bow strengthened for ice operation, and can carry both freight and passengers. She is equipped with fore and aft compound engines with cylinders 18 and 42 by 24 ins., of 800 i.h.p., at 150 r.p.m. There are two Scotch boilers 13¼ by 11½ ft. supplying steam at 180 lbs. Her dimensions are, length 148 ft. 5 ins., breadth 28 ft., depth 12 ft.; tonnage, 337 gross, 229 register. There is accommodation for about 1,000 passengers and her speed is 15 miles an hour. She is excellently furnished, a special feature being made of the men's combined smoking and observation room, and in addition to the ordinary dining accommodation, a modern lunch counter has been installed. She will call at Windsor and Walkerville, each way.

### Manitoba, Saskatchewan and Alberta.

An order in council has been made fixing the rates at which the repair slip which is maintained at Selkirk, Man., for the repair and upkeep of the Government dredging fleet, may be utilized by vessel owners, when it is not engaged in Government work.

The Peace River Navigation Co.'s s.s. Northland Call, which was completed recently at Peace River Crossing, Alta., made her first trip to Fort St. John, May 10. She is 100 ft. long by 18 ft. beam and of 40 tons capacity. Her speed up stream is about 6 miles an hour.

The Northland Transportation Co., Ltd., which is being formed at Saskatoon, Sask., to carry on a general navigation business, is in process of organization, but it has not yet been decided whether the company will commence operations this year or not, much depending on the general state of business, which is suffering from war conditions.

Peace River Navigation Co., Ltd., has been incorporated under the Dominion Companies Act, with \$50,000 capital and office at Peace River Crossing, Alta., to carry on the general business of carriers of merchandise and passengers by land and water, and in connection therewith to own and operate steam and other vessels, railway terminals, telegraph lines, telephone lines, hotels, elevators, etc. The incorporators are, J. K. Cornwall, C. Young and A. L. Sawle, Edmonton; G. Magar and L. M. Powers, Peace River Crossing.

### British Columbia and Pacific Coast.

The Vancouver Harbor Commissioners have deposited with the Dominion Public Works Department, plans and description of a bulkhead and fill to be built in the portion of False Creek known as the Granville St. mud flats, at Vancouver.

The Grand Trunk Pacific Coast Steamship Co.'s s.s. Prince George has completed her overhaul of hull and machinery, and has returned to service to northern ports. She will operate on a bi-weekly service until June 8, when a tri-weekly service will be put on.

Greer, Coyle and Co., tug owners, Vancouver, have purchased the tug Freno from A. Wallace, North Vancouver. She was built at North Vancouver in 1912, and is screw driven by engine of 24 n.h.p., burning oil as fuel. Her dimensions are, length 79.2 ft., breadth 18.8 ft., depth 8.3 ft.; tonnage, 94 gross, 64 register.

The Grand Trunk Pacific Coast Steamship Co.'s new dock at Seattle, Wash., to replace the one destroyed by fire last year, will be completed and ready for traffic in July. Every precaution against fire has been



## Mainly About Marine People.

taken in the new structure. The new dock will have greater capacity than the old one, in order to take care of the company's increasing coastal trade from that port. An unusual feature of the dock is a hardwood driveway the entire length of the superstructure, composed of Australian ironwood.

Navigation on the Yukon River was reported to have been opened May 5, the earliest of which there is any record, by the Side Streams Navigation Co.'s s.s. Vidette, which left Lake Lebarge on that date for Dawson. It was stated that owing to low water, the trip would take much longer than customary. The management of the White Pass and Yukon Route, which operates the British Yukon Navigation Co. and the American Yukon Navigation Co., announces that navigation on the Yukon River between the headwaters of the river at Whitehorse, Yukon and the mouth of the river at St. Michael, Alaska, will open June 1.

The Canadian North Pacific Fisheries Co., with which the Mackenzie and Mann interests are associated, has ceased business, and the entire plants and vessels are being offered for sale. The company was originally formed several years ago by the incorporation of a number of small whaling concerns owing to the failure of the sealing business. Some new whaling vessels were acquired, and subsequently the company sold out to the Mackenzie and Mann interests and the present company was formed with a capital of \$3,000,000. New vessels were added and the plants extended, but it is stated locally that the actual business done did not compensate for the increased capital and other expenditures.

## The Water Levels in Montreal Harbor.

In an interview with a representative of a Montreal daily paper, L. L. Henderson, General Manager, Montreal Transportation Co., and a past President of the Dominion Marine Association, is reported to have said: "Representations are being made to the Government regarding the situation, which is very serious. Well known vessel owners in Montreal are preparing to lay off some of their vessels and we are following suit. One factor in the causing of low river levels is the use to which canals are being put. They were built primarily for navigation purposes and now are being handed over to manufacturers as power propositions. The manufacturers along the banks of the Cornwall canal are taking too much water to permit of large draught vessels passing through lower down. That situation must be faced. Either the levels of the river must be restored or freight rates must be increased."

The interview continues, that Mr. Henderson pointed out that three of his company's vessels, the Northmount, Rosemount and Westmount, were stopped at Kingston and 100 bush of grain lightered from each, and the vessels sent through the rapids and the Cornwall canal, and that the lightering operations had taken all the profit from the trip, the expenses between Fort William and Montreal not being covered.

A Motor Ship of 450 h.p. equipped with reversible propeller blades to avoid reversing the engine has been built by the Nederlandsche Fabriek, of Amsterdam, Holland. It is an oil tank vessel 185 ft. long and 36½ ft. beam, with a capacity of 835 tons of oil. The reversing of the propeller is effected by rotating the three blades around a central axis, hence the pitch of the propeller can be changed and it can be thrown into neutral position as well as into fore and aft position, when desired.

The marriage is announced to take place at Woodlands, Que., June 3, of Miss E. M. Ross, daughter of W. G. Ross, Chairman, Montreal Harbor Commissioners, to H. McD. Brown.

L. J. Pyette, who, until three years ago, was master of the s.s. Assiniboia, of the C. P.R. Great Lakes Steamship Service, when he retired owing to ill health, died at Owen Sound, May 13, aged 55.

The marriage of Miss M. L. Weller, daughter of J. L. Weller, M.Can.Soc.C.E., Engineer in Charge, Welland Ship Canal, to E. P. Muntz, Toronto, is announced to take place during June.

Hon. J. D. Hazen, M.P., Minister of Marine and Fisheries, underwent a slight operation for throat trouble in the Royal Victoria Hospital, Montreal, May 4, which we are advised was entirely successful.



P. 422.  
J. S. Byrom,  
Superintendent, Great Lakes Steamship Service,  
Canadian Pacific Railway.

Sir William Price, whose resignation as Chairman, Quebec Harbor Commission, was announced in our last issue, has reconsidered the matter at the request of the Prime Minister, and will retain the position for the present navigation season.

W. H. Rowlands, heretofore Assistant Port Steward, has been appointed Port Steward, British Columbia Coast Steamship Service, C.P.R., Victoria, vice J. S. Byrom, whose appointment as Superintendent, Great Lakes Steamship Service, C.P.R., Port McNicoll, Ont., was announced in our last issue.

H. A. Bayfield, heretofore Superintendent of Dominion Government dredges in British Columbia, has been appointed Assistant Engineer in connection with the Government terminal works at Port Nelson, Hudson Bay. He has served with the Intercolonial Ry. and the Great Northern Ry., and was for some time Mechanical Superintendent of the Montreal harbor works. He is a member of the Canadian Society of Civil Engineers, and of the American Society of Civil Engineers.

C. E. Croft, who has been appointed General Agent, Passenger Traffic Department (Commissary), Canada Steamship Lines, Yonge St. Wharf, Toronto, was born at Cobourg, Ont., Aug. 26, 1882, and entered transportation service in 1904, since when he has been, to 1909, secretary to Traffic Manager, Richelieu and Ontario Navigation Co., Montreal; 1909 to 1913, chief clerk to Traffic Manager, same company, Montreal; 1913 to 1914, chief clerk to Manager, Eastern Lines, same company, Montreal; 1914 to 1915, chief clerk, Superintendent of Operation, Passenger Steamers, Canada Steamship Lines, Ltd., Toronto.

J. S. Byrom, whose appointment as Superintendent of Great Lakes Steamers, C.P.R., Port McNicoll, Ont., was announced in our last issue, was born in Jersey City, N.Y., Feb. 10, 1872, of British parentage, and on the death of his father, six months after, was taken to Scotland, where he was educated. At the age of 15 he went to sea, before the mast, and for two years sailed in ships of various rigs round the British coast. In 1889 he came to Halifax, N.S., on the Allan Line Sardinian, and entered the service of the Canadian Pacific Navigation Co., at Vancouver, B.C., serving as coal trimmer, sailor and steward, successively. From the autumn of 1890 to the spring of 1895, he served as assistant and chief steward on various Pacific steamships running out of San Francisco, after which he entered the Kootenay Lakes Steam Navigation Co.'s service as steward, and remained in that service on the absorption of the company by the C.P.R. In 1901 he returned to the Pacific coast, the C.P.R. having acquired the Canadian Pacific Navigation Co., in the previous year, and was appointed shore steward and storekeeper, including a general supervision of all marine stores and labor, of the C.P.R. British Columbia Coast Service, which position he retained until his present appointment. Prior to leaving Victoria, B.C., for Port McNicoll, he was entertained to dinner at the Empress Hotel, by his associates and close personal friends.

**Prison Ships.** The Financial Secretary to the Admiralty stated in the British House of Commons recently, that nine vessels had been utilized for prisoners of war, at a cost of £86,000 a month, varying from £7,000 to £12,000 a month according to tonnage. Three of these vessels have been liberated, leaving the following in the service,—Allan Line s.s. Scotian, 1,132 prisoners; Canadian Northern Steamships s.s. Royal Edward, with 1,200; C. P. R. s.s. Lake Manitoba, 1,242; Cunard Co.'s steamships Ascania, 1,397; Ivernia, 1,575, and Saxonia, 2,300. The cost of fitting each of these vessels for the purpose was from £1,000 to £1,500, clothing and boots are supplied as required, while the cost of provisioning the men is under discussion with the owners. It was stated that possibly the vessels would all be liberated for other Government service by the end of April, as other accommodation was being arranged for.

The Allan Line s.s. Grampian was reported to have been in collision with the s.s. Kingsway and in clearing to have fouled the s.s. Moltkefels, in the River Mersey, near Liverpool, Eng., May 17. She was slightly damaged and put back to dock for examination.

The value of imports at St. John, N.B., for the fiscal year ended Mar. 31, were \$9,112,916, and the exports \$43,872,932, against \$9,433,220 and \$21,359,760 respectively for the previous year.



## The Welland Canal's Great Engineering Features.

For years the interest of those who follow the engineering of waterways has been centered in the Panama and the New York State Barge canals. They were tremendous projects, replete with details of the greatest interest to engineers, both in design and construction. Now that the work of building them is drawing to a close, interest will probably shift to the construction of the Welland Ship Canal, on which the Canadian Government will spend \$50,000,000. And well will it deserve the attention previously given to Panama and the New York work. Only those who have had occasion to look into the Welland designs carefully appreciate fully the magnitude of the enterprise. In length it is not notable. Its locks, however, will stand with the great ones of the world. They are to have clear inside dimensions of 80 x 800 ft., with 30 ft. of water on the sills, while each of them will have the great lift of 46½ ft. At Thorold will be constructed a flight rivaling that at Gatun, for though the locks themselves will not accommodate as big a vessel the lift will be greater. At this point there will be three of them in flight, each with a lift of 46½ ft., or a total lift of 139½ ft. Moreover, as at Gatun, the flight is double, one for upbound and the other for downbound vessels. In details the locks will be very interesting. The most unusual feature will be the use of swinging single leaf gates. The adoption of this design followed only after a most careful study of all other alternatives. It would not be surprising if the Canadian peninsula just west of the Niagara River should become a Mecca for canal engineers during the next few years.—Engineering Record.

## An Alaska River Opened to Commerce.

The United States Secretary of Commerce has just announced that a practicable navigable channel from Behring Sea into the mouth of the Kuskokwim River has been discovered by Capt. Lukens, of the U.S. Coast and Geodetic Survey. This river is the second greatest in Alaska. It is 9 miles wide at its mouth and navigable for over 600 miles inland. The great submerged flats of its delta extend 100 miles out to sea, and it was through this dangerous delta that the surveying steamer Yukon made the discovery of the channel, which hitherto had not been charted. It is expected that the newly discovered channel will make it possible for steamship companies to send vessels up into the Kuskokwim and thus initiate the development of the latent mining, fishing and agricultural resources of the region. In making the survey, Captain Lukens reports that he took 14,256 soundings, covering an area of over 100 sq. miles, in some instances locating soundings by observations on mountain peaks more than 60 miles distant. The whole working season was confined to 83 days, and in July alone 29½ of these days were lost on account of bad weather.

Plans are being made at Seattle for the construction by different companies of two light draught steamships designed especially for the navigation of the Kuskokwim. They will be ready at the opening of navigation next spring.—Engineering News.

The various insurance companies concerned with the salvage of silver bars from the wrecked C.P.R. s.s. Empress of Ireland, have had their appeal dismissed, the award of \$59,257 to the Canadian Salvage Association being confirmed.

## Trade and Supply Notes.

The material which appears in this column is supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. ~~Advertisements will not be accepted~~ with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

The Dominion Iron & Steel Co., Sydney, N.S., has received an order from the South African Government Railways, for 35,000 tons of steel rails.

Canadian Consolidated Rubber Co., Ltd.—Lt. Col. A. E. Massie, the company's Manager for the Maritime Provinces, with headquarters at St. John, N. B., left recently for Europe in command of the divisional train. Army Service Corps, second Canadian contingent. W. R. Stewart is acting as Division Manager during his absence.

Henry J. Coles Ltd., London Crane Works, Derby, Eng., have issued a catalogue of cranes of more or less standard design including steam travelling, fixed base, shunting, stacking, permanent way, gantry or portal, double barrel and navy cranes, also petrol and oil motor driven, electric and overhead travelling cranes and single and double chain grabs.

Canadian Locomotive Co., Kingston, Ont., A. W. Wheatley, Vice President and General Manager, who returned recently from Russia, has given out the following statement: "In order to take care of additional shell orders, consisting of 4.5 and 60 pounders, we are proceeding with the erection of our new blacksmith shop, intending to use it in connection with the shell manufacture and to take care of the new orders—at the same time permitting us to go ahead with locomotives, should we secure orders for same. The new shop will be on the water front on the south side of the plant, being 233 x 67 ft. The steel is on the ground, and we hope to have this shop ready for occupancy in six weeks. We are placing orders for the necessary machinery. At present we have 400 employees, and with the new orders, this number should be increased to between 600 and 700, with a prospect of still greater increase should we be fortunate enough to secure locomotive orders. While we are putting all of our old employees to work, we anticipate a shortage of skilled mechanics, which must necessarily be taken care of by going outside. We have sufficient work on hand to keep us going for a year at least."

The Dominion Bridge Co., Ltd., Montreal, has issued catalogue S1, 108 pages, 11½ by 8½ ins., describing and illustrating a number of its most important erections. The foreword states that the company was incorporated in 1883 and that its first large contract was for the cantilever bridge at St. John, N.B., one of the next being the C. P.R. bridge over the St. Lawrence River at Lachine. Among the principal bridge structures described and illustrated and which are of special interest to transportation men are the C.P.R. ones over the Lachine Canal, Montreal, and over various rivers at Vaudreuil, St. Rose and Three Rivers, Que., Mud Lake, Ont., Kildonan, Man., Surprise Creek, Salmon River and Pitt River, B.C.; G.T.R. ones over Lachine Canal and at Rockfield and Beloeil, Que.; Canadian Northern Ry. ones at Bout de L'Isle, Riviere des Prairies and St. Maurice, Que.; Lytton, Ashcroft and several other points in B.C.; Intercolonial Ry. ones at Miramichi, N.B., and Grand Narrows, N. S.; Canada Atlantic Ry. at Coteau, Que.;

Dominion Atlantic Ry. ones at Windsor, Jaspereaux and Bear River, N.S.; National Transcontinental Ry. viaducts at Cap Rouge and Little Salmon River, Que.; the Alexander interprovincial bridge, Ottawa, and the British Columbia Government bridge over Fraser River; the Intercolonial Ry. ferry landing at Port Mulgrave, N.S.; C.P.R. subways at Montreal; C.P.R. train shed at Windsor St. Station, Montreal; Canadian Vickers Co.'s ship-building berth, Montreal; Montreal Harbor Commissioners' sheds; National Transcontinental Ry. locomotive shops, Quebec, and lift locks on Trent Valley canal at Peterborough and Kirkfield, Ont.

## Telegraph, Telephone and Cable Matters.

G. Smith, inventor of the duplex and quadruplex systems of telegraphy, died at Amityville, N.Y., May 4, aged 77.

G. Scott, chief of the Pacific Cable Board's office at Vancouver, B.C., died after a short illness, at English Bay, May 14, aged 38.

The Great North Western Telegraph Co. has installed a 16-circuit selector concentration unit of the standard Western Union type, in its Montreal office.

The Great North Western Telegraph Co. has opened offices at Beaumaris, Cardinal Canal, Wheatley, Ont., and Joliette station, Que., and has closed its offices at Devlin and Southwold, Ont.

The Association of Railway Telegraph Superintendents will hold its 34th annual convention at Rochester, June 22 to 25. The programme includes a number of interesting papers for discussion, and the social features include an automobile ride, a dinner and a steamship trip on Lake Ontario.

W. Marshall, who was appointed Assistant Manager, C.P.R. Telegraphs, Western Lines, Winnipeg, recently, was presented with an address, a cabinet of silver and a gold watch, by the Toronto staff, May 12. Prior to going to Winnipeg he had for some time been Superintendent of Telegraphs, Ontario Division, C.P.R., Toronto.

Major J. C. N. Kennedy, R.E., who died in Queen Alexandra's Hospital, London, Eng., Apr. 20, as the result of an operation, was born in Peterborough, Ont., and was in the British Army for nearly 30 years. During the developing period of the wireless telegraph system as invented by W. Marconi, he was appointed by the British Government to assist in the experiments and tests.

## Among the Express Companies.

The Board of Railway Commissioners has passed an order amending the terms and conditions endorsed on the express merchandise receipt. It is given in full on another page under Traffic Orders by Board of Railway Commissioners.

H. Conybeare, Canadian Ex. Co.'s messenger at Lindsay, Ont., who decamped with about \$3,000, and was arrested at Edmonton, Alta., was convicted at Lindsay, May 1, but sentence was suspended, and he was placed under a bond of \$400, on the understanding that he enlist for service with the Canadian expeditionary forces, which he did.

The National Elevator Co.'s elevator at Port Arthur, Ont., with a capacity of 500,000 bush., was burned, May 3. There was only a small amount of grain in it. The loss is estimated at \$100,000, covered by insurance for \$60,000.



### Transportation Conventions in 1915.

June 9-11.—American Railway Master Mechanics' Association, Atlantic City, N.J.  
 June 14-16.—Master Car Builders' Association, Atlantic City, N.J.  
 June 15.—Train Despatchers' Association of America, Minneapolis, Minn.  
 June 16.—Freight Claim Association, Chicago, Ill.  
 June 22-25.—Association of Railway Telegraph Superintendents, Rochester, N.Y.  
 June 23-25.—Association of Transportation and Car Accounting Officers, Niagara Falls, N.Y.  
 July.—American Railway Tool Foremen's Association.  
 July 14-17.—International Railway General Foremen's Association, Chicago, Ill.  
 Aug. 17.—International Railroad Master Blacksmiths' Association, Philadelphia, Pa.  
 Aug. 19, 20.—American Association of Railroad Superintendents, San Francisco, Cal.  
 Sept. 14-16.—Roadmasters' and Maintenance of Way Association, Chicago, Ill.  
 Sept. 14-17.—Master Car and Locomotive Painters' Association of the United States and Canada, Detroit, Mich.  
 Sept. 21-24.—Railway Signal Association, Salt Lake City, Utah.  
 October.—American Association of Dining Car Superintendents.  
 Oct. 4, 5.—American Association of Traveling Passenger Agents, Boston, Mass.  
 Oct. 4-8.—American Electric Railway Association, San Francisco, Cal.  
 Oct. 5-7.—Railway Fire Protection Association, Chicago, Ill.  
 Oct. 13-15.—American Association of Railway Surgeons, Chicago, Ill.  
 Oct. 19-21.—Maintenance of Way and Master Painters' Association of the United States and Canada, St. Louis, Mo.  
 Oct. 19-21.—American Railway Bridge and Building Association, Detroit, Mich.

### Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:  
 Canadian Car Service Bureau—J. Reilly, Manager, 401 St. Nicholas Building, Montreal.  
 Canadian Electric Railway Association—Acton Burrows, 70 Bond Street, Toronto.  
 Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadian Express Building, Montreal.  
 Canadian Freight Association (Western lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.  
 Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday each month, 8.30 p.m., except June, July, and August.  
 Canadian Society of Civil Engineers—C. H. McLeod, 176 Mansfield St., Montreal.  
 Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.  
 Central Railway and Engineering Club of Canada—C. L. Worth, 409 Union Station, Toronto Meetings at Toronto, 3rd Tuesday each month, except June, July, and August.  
 Dominion Marine Association—F. King, Counsel, Kingston, Ont.  
 Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.  
 Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.  
 Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.  
 Express Traffic Association of Canada—W. H. Burr, Chairman, Toronto.  
 Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.  
 Hydro-Electric Railway Association of Ontario, T. J. Hannigan, Guelph, Ont.  
 International Water Lines Passenger Association—M. R. Nelson, New York.  
 Niagara Frontier Summer Rate Committee—James Morrison, Montreal.  
 Nova Scotia Society of Engineers—A. R. McCleave, Halifax, N.S.  
 Quebec Transportation Club—A. F. Dion, Quebec.  
 Ship Masters' Association of Canada—Capt. E. Wells, 45 St. John Street, Halifax, N.S.  
 Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.  
 Western Canada Railway Club—Louis Kon, Box 1707, Winnipeg. Meetings at Winnipeg, 2nd Monday each month, except June, July, and August.

Accommodations in Jasper Park. The Grand Trunk Pacific Ry. has decided to establish a summer tent city in Jasper Park in the Rocky Mountains with sleeping tents and marquees for meals. The Dominion Government is also providing shelter houses. It is the intention to build a large hotel in the park some time in the future.



### DEPARTMENT OF THE NAVAL SERVICE.

Tender for 30 Ton Steam Wharf Crane—Halifax Dockyard.

TENDERS addressed to the undersigned at Ottawa, and endorsed "Tender for Steam Wharf Crane, Halifax Dockyard," will be received up to noon of the 1st of July, 1915, for the manufacture, supply, and erection of a 30 ton Steam Wharf Crane, of the Derricking Jib Type, for the above mentioned Dockyard.

The tender should be accompanied by an accepted cheque in favor of the Deputy Minister of the Naval Service, on a chartered Canadian bank, for \$1,600.00, which cheque will be forfeited should the successful tenderer decline to enter into the contract as agreed, or fail to complete the work in accordance with the conditions of the contract and specification.

Representatives of firms desirous of tendering are to state in making application for specification the name of the firm manufacturing and erecting the crane, observing that subletting any portion of the contract is inadmissible.

The specification and conditions of contract may be seen at the office of The Consulting Naval Engineer, Ottawa.

Newspapers copying this advertisement without authority will not be paid for same.

The Department does not bind itself to accept the lowest or any tender.

G. J. DESBARATS,

Deputy Minister of the Naval Service.

Department of the Naval Service,  
—79499. Ottawa, April 30th, 1915.

### FOR SALE,

Steamer "Frontenac," length 89 feet, beam 21½ feet, draft (about) 7 feet. Inspection invited. May be seen in Kingston, Ont. Ask for particular, The Calvin Co., Ltd., Kingston, Ont.

### THE VICTORIA ROLLING STOCK AND REALTY CO. OF ONTARIO, LIMITED.

NOTICE is hereby given that a dividend of 3½% on the paid-up capital stock of the Company for the six months ended May 31st, 1915, has been declared payable June 1st, 1915, to the shareholders of record as of the 31st of May, 1915.

By order of the Board,

G. T. CHISHOLM, Secretary.

Toronto, May 8th, 1915.

### CANADIAN PACIFIC RAILWAY COMPANY.

#### DIVIDEND NOTICE.

At a meeting of the Board of Directors held to-day, a dividend of two and one-half per cent. on the Common Stock for the quarter ended 31st March last, being at the rate of seven per cent. per annum from revenue and three per cent. per annum from Special Income Account, was declared payable on 30th June next to Shareholders of record at 3 p.m. on 1st June next.

By order of the Board,

W. R. BAKER,  
Secretary.

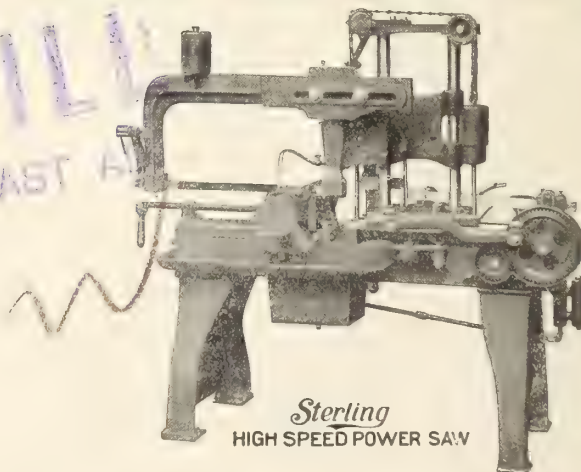
Montreal, 10th May, 1915.

### GRIFFIN & BRINKERHOFF

P.O. Box 97, Windsor, Ont.

Canadian manufacturers of the Celebrated Wheel Truing Brake Shoe. Best Wheel Grinders in the World.

## "STERLING" Hack Saws



A Combination that will save money for you.

Manufactured by

**DIAMOND SAW & STAMPING WORKS,**  
BUFFALO, N.Y., U.S.A.





*Loading  
Northern Electric  
Railway Signal Wire  
from one of the big shipping  
platforms of the Company's new  
plant at Montreal*

## *Northern Electric* RAILWAY SIGNAL WIRE AND CABLE

There are no second or third or fourth grades of Northern Electric Railway Signal Wire or Cable for sale. We do not make them. We make only the one grade, and that embodies the best of all our engineering knowledge and a manufacturing experience extending over many years.

When you consider our unequalled facilities for turning out "Made Better in Canada" products, you will ask us to figure on all your requirements.

*Northern Electric Company*  
LIMITED

Montreal Halifax Toronto Winnipeg Regina Calgary Edmonton Vancouver Victoria





## Go to Chicago With Your Ad Man

Attend with him the big Convention of Associated Advertising Clubs of the World, June 20 to 24, 1915

You will assimilate more knowledge of modern methods of Advertising, Selling, Distribution, and Management during these five days than could be obtained in a lifetime of book study.

You will be brought in touch with the men who have done and are now doing the big things of business. You will participate in the biggest business meeting the world has ever known. You will listen to the expressed thoughts of distinguished Americans concerning present day and future business movements.

You will enjoy Chicago's wonderful park system, boat rides on Lake Michigan, modern hotels, theatres, and other amusements, including the big street pageant, and the Gridiron Show given at the Auditorium Theatre by 150 Chicago Advertising men.

**Distinguished Speakers.** President Wilson, State conditions permitting, will head the notable

array of speakers. Hon. William Jennings Bryan, George Horace Lorimer, Arthur Brisbane, John H. Fahey and Henry Watterson are among the others who will be heard.

Advertisers in and publishers of trade and technical journals will hold special Departmental meetings to discuss their own problems and learn how they can co-operate to better advantage. Other departmental meetings will take up such subjects as catalogues, engraving, printing, mailing lists, sales plans and kindred subjects.

The ladies are wanted too. Special entertainment—teas, luncheons, automobile trips, etc., is being arranged for them by Mrs. Chas. H. Porter and her committee.

Clear up your desk. Take a five days' vacation in a lake-cooled city. Mix with the business builders. You will return a better business man; a better physical man; and a better thinking man.

For further information, programme, rates, etc., address Convention Bureau, Advertising Building, Chicago, Ill.

Canadian Railway and Marine World

70 Bond Street, Toronto, Can.

### STANDARD At The Exposition

A fairly representative display of STANDARD Wires and Cables and Cable Accessories is on exhibit at the Panama Pacific International Exhibition at San Francisco.

If you are there we will be glad to welcome you at our booth in the Palace of Machinery and would request that you give your name to the attendants.

**Standard Underground Cable  
Co. of Canada, Limited**  
Hamilton, Ontario

Montreal  
Que.

Winnipeg  
Man.

Seattle  
Wash.

ESTABLISHED 1849.

### BRADSTREET'S

Capital and Surplus, \$1,500,000.  
Offices throughout the Civilized World.  
Executive Offices:  
NOS. 346 and 348 BROADWAY,  
N.Y. CITY, U.S.A.

The Bradstreet Company gathers information that reflects the financial condition and the controlling circumstances of every seeker of mercantile credit. Its business may be defined as of the merchants, by the merchants, for the merchants. In procuring, verifying and promulgating information, no effort is spared, and no reasonable expense considered too great, that the results may justify its claim as an authority on all matters affecting commercial affairs and mercantile credit. Its offices and connections have been steadily extended, and it furnishes information concerning mercantile persons throughout the civilized world.

Subscriptions are based on the service furnished, and are available only by reputable wholesale, jobbing and manufacturing concerns, and by responsible and worthy financial, fiduciary and business corporations. Specific terms may be obtained by addressing the Company at any of its offices.

Correspondence Invited.

OFFICES IN CANADA:

Halifax, N.S.; Hamilton, Ont.; London, Ont.; Montreal, Que.; Ottawa, Ont.; Quebec, Que.; St. John, N.B.; Toronto, Ont.; Vancouver, B.C.; Calgary, Alta.; Edmonton, Alta.; Winnipeg, Man.; Victoria, B.C.

THOS. C. IRVING,

Gen. Man. Western Canada, Toronto.

### IMPERIAL BANK

Established OF CANADA 1875

Capital Authorized .....\$10,000,000  
Capital Paid-up ..... 6,925,000  
Reserve and Undivided Profits. 8,100,000

Head Office: Toronto.

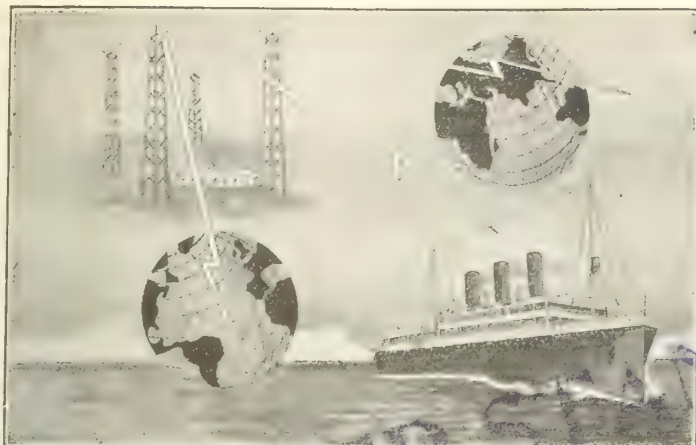
Letters of Credit, Travellers' Cheques and Drafts Issued, available in all parts of the world.

Sterling and New York Exchange bought and sold.

Savings Department: Interest allowed on deposits at best current rates.

Branches throughout the Dominion of Canada.





OF THE WORLD'S WIRELESS  
STATIONS, 80% ARE ON THE MARCONI SYSTEM.  
LET US SUBMIT SUGGESTIONS!

## MARCONI WIRELESS TELEGRAPH APPARATUS

MADE IN CANADA.

Wireless equipment of all kinds supplied: Land, ship, railway and aeroplane sets with ranges of from 50 to 2,000 miles.

Have you considered the advantages of connecting up factory or mine to head office by wireless telegraphy?

**SHIP SETS**—Suitable for liners, yachts, tugs and freight boats and scows—our specialty.

Our stations may be hired or bought outright.

THE  
**Marconi Wireless Telegraph**  
Company of Canada, Limited  
Shaughnessy Building, Montreal

JAMES THOMSON,  
Pres. and Mang. Director.

J. G. ALLAN,  
Vice-President.

JAMES A. THOMSON,  
Secretary.

## THE GARTSHORE-THOMSON PIPE & FOUNDRY CO.

MANUFACTURERS OF

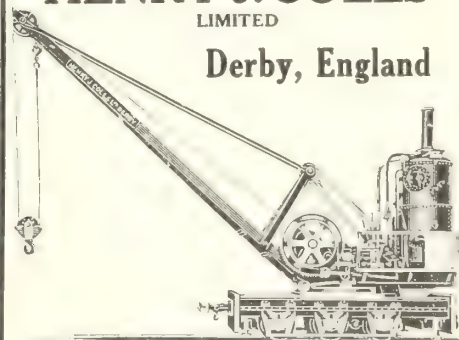
LIMITED



3 inches to 60 inches diameter  
FLEXIBLE AND FLANGE PIPE AND SPECIAL CASTINGS  
FOR WATER, GAS, CULVERT AND SEWER  
HAMILTON, ONT.

## HENRY J. COLES LIMITED

Derby, England



Makers of Steam and Electric Travelling Cranes, Overhead Electric Cranes, Single and Double Chain Grabs, Steam Navvies, Petrol and Oil Motor-driven Cranes, Shunting and Breakdown Cranes.

Telegrams: "Coles, Derby."

## FIRTH'S TOOL STEELS

Can be depended upon. They represent Crucible Steel in its highest stage of development, and are recognized as Standard Brands in every country where steel is used.

We carry the largest stock of High Grade Tool Steel in Canada.

All principal sizes Annealed and Unannealed.

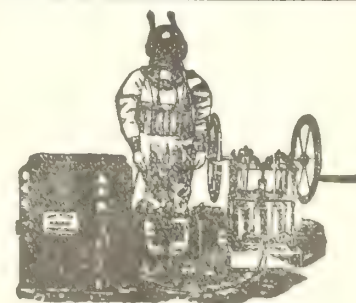
## THOS. FIRTH & SONS, LIMITED

Norfolk Works and Tinsley Works, SHEFFIELD, England.  
Works also at Riga, Russia; McKeesport, Pa., and Washington, D.C.

**MONTREAL**  
507 St. Paul St.

J. A. SHERWOOD  
Canadian Manager

**TORONTO**  
79 Adelaide St. W.



## JOHN DATE

Manufacturer of

## Diving Apparatus

For Sale or Hire

Brass Founder and Coppersmith  
13-15 Concord St., Montreal

## Sessions-Standard Friction Draft Gear

Simplest and Best

Both  
Made by

Standard Coupler Co.  
30 CHURCH STREET, NEW YORK

## Standard Steel Platforms

Used by all Canadian Railway





## Your Hands Can't Earn the Money You Need

You'll have to work for low wages all your life if you depend upon your hands to make your living. To earn more money you've got to learn how to work with your *head*—you must have *special training* for some particular line of work.

And you can get this training without leaving your home or losing an hour from your work—the International Correspondence Schools can bring it to you right in your *home* during your *spare time*.

They can train you for the very job you want—where you can earn more than enough to meet your needs.

If you want to advance in your present occupation, the I. C. S. can train you for promotion. If your present work is not pleasant, the I. C. S. can qualify you for a good position in the kind of work you like best.

Every month more than 400 I. C. S. students of all ages and occupations voluntarily report getting better jobs and bigger pay as a *direct* result of I. C. S. training. What these men did *you* can do.

### Mark the Coupon

What occupation attracts you most or what position do you want? Mark it and mail the coupon now, and learn how the I. C. S. can help *YOU* to earn more money.

All lessons for Canadian students are corrected at the Canadian Instruction Department in Toronto by instructors who are thoroughly familiar with conditions in Canada.

#### INTERNATIONAL CORRESPONDENCE SCHOOLS Box 1072, SCRANTON, PA.

Please explain, without obligation to me, how I can qualify for the position before which I mark **X**:

- |   |   |
|---|---|
| <input type="checkbox"/> Locomotive Engineer      | <input type="checkbox"/> Marine Engineer        |
| <input type="checkbox"/> Air-Brake Inspector      | <input type="checkbox"/> Ocean Navigation       |
| <input type="checkbox"/> Air-Brake Repairman      | <input type="checkbox"/> Lake Navigation        |
| <input type="checkbox"/> R. R. Shop Foreman       | <input type="checkbox"/> Coastwise Navigation   |
| <input type="checkbox"/> R. R. Trenching Engin'r  | <input type="checkbox"/> Motor Boat Running     |
| <input type="checkbox"/> R. R. Traveling Fireman  | <input type="checkbox"/> Electrical Engineer    |
| <input type="checkbox"/> R. R. Construction Eng'r | <input type="checkbox"/> Electric Car Running   |
| <input type="checkbox"/> R. R. Accounting         | <input type="checkbox"/> Electric Railways      |
| <input type="checkbox"/> Bookkeeper               | <input type="checkbox"/> Tel. and Tel. Engineer |
| <input type="checkbox"/> Stationmaster            | <input type="checkbox"/> Mechanical Engineer    |

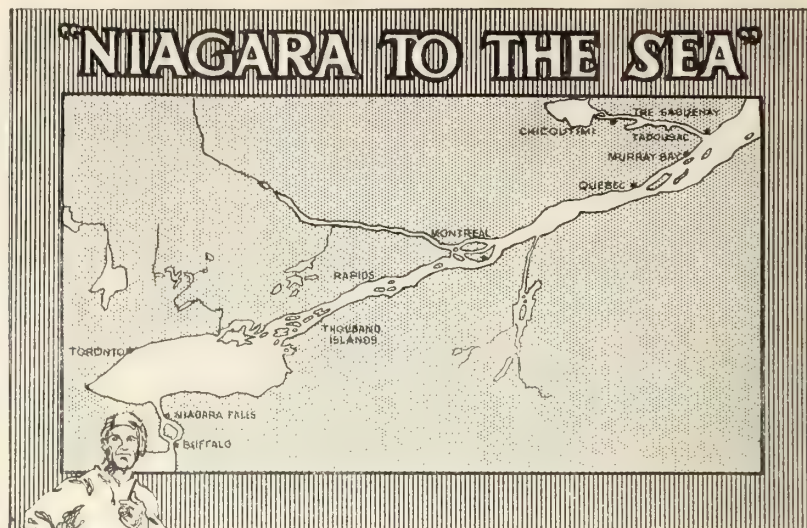
Name \_\_\_\_\_

Street and No. \_\_\_\_\_

City \_\_\_\_\_ Prov. \_\_\_\_\_

Present Occupation \_\_\_\_\_

Employed by \_\_\_\_\_



A HABITANT  
TYPE

The folder entitled "*Niagara to the Sea*" freely sent to all who write.

## Quaint Quebec

—historically interesting and delightfully reminiscent of old France—forms one feature of a magic chain of experiences, included in the "Niagara to the Sea" trip.

The tranquil St. Lawrence, with its Thousand Islands; the marvellous "rapids"; the brief sojourn in the land of the French-Canadian habitant; the wonderful Saguenay River trip, and stupendous Cape Trinity—

All these attractions offer a holiday unequalled in diversity of interest, and with comfort supreme on these splendid steamers.

Round Trip,  
Niagara Falls to  
Chicoutimi and  
Return,

**\$34.55**

Any portion of  
the Trip at  
Correspondingly  
Low Rates.

Thos. Henry, Passenger Traffic Manager

## Canada Steamship Lines Limited

134 Victoria Square

Montreal, Que.



### THE LIGHT THAT'S RIGHT

The Schroeder Sunbeam Incandescent Headlights are giving unparalleled service.

REFLECTOR WILL NOT TARNISH

SAFETY FIRST, lights track 1000 feet.

The Schroeder Generator is simple, compact and thoroughly efficient.

**The HIRAM L. PIPER CO., Limited**

MONTREAL, Sole Agents for Canada  
Send for Circular and full particulars

## CANADIAN BRONZE LIMITED

Brass Wearing Parts for Locomotives. Journal Bearings for Freight and Passenger Service. BABBITTS. Miscellaneous Brass Castings for Railroads.

Works and Office: 69 DELORIMIER AVENUE, MONTREAL, QUE.



## Your Summer Holiday!

### **This Year** **The** **Maritime Provinces**

#### **LA BAIE DE CHALEUR**

An arm of the Gulf of St. Lawrence. The estuary of the Restigouche, is one of the most fascinating and superb panoramic views in America. Smooth, sandy beaches tempt the bather. Many coves and harbors where boating is alluring and shorn of its risks.

#### **CAPE BRETON**

An island wherein are other isles innumerable. Bras d'Or Lakes, an inland sea dividing the island in twain, provides a spacious waterway through the interior. Nature has made Cape Breton an ideal land for a summer holiday.



#### **ABEGWEIT**

(Cradled on the Waves)

#### **Prince Edward Island**

Sweet pastoral scenery, fragrant groves, almost tropical foliage, health-giving breezes, atmosphere marvellously clear. Sky as blue as sunny Italy.

#### **Summer Excur- sion Fares**

gives in comprehensive form summer fares from important centres to the numerous resorts reached by Canadian Government Railways, circular tours, list of hotels and summer homes and their rates.

Write for free copies of illustrated descriptive folders and any other information to

**H. H. MELANSON,**  
General Passenger Agent

Canadian Government Railways,  
Moncton, N.B.

## **Rapid Loose Material Unloading**



For unloading Sand, Gravel, Crushed Stone and Coal from cars and scows use the

### **"Faivrette" Clam Bucket**

All Steel Construction, Simplicity of Design, Powerful Closing Arm, Unobstructed Opening insure

Low Upkeep, Rapid Action, Capacity Bucket Loads, Effectual Cleanup.

Write for Booklet

**M. Beatty & Sons**  
LIMITED

WELLAND, CANADA  
ESTABLISHED 1862

TORONTO BRANCH: Goodyear Building, Telephone, Adelaide 208.  
AGENTS: H. E. Plant, 1790 St. James St., Montreal; E. Leonard & Sons, St. John, N.B.; Robt. Hamilton & Co., Vancouver; Kelly-Powell Ltd., McArthur Bldg., Winnipeg.

## **DOMINION BRIDGE COMPANY, LIMITED**

Head Office and Works,  
MONTREAL, P.Q.

Branch Offices and Works,  
TORONTO, OTTAWA AND WINNIPEG.



Lachine Bridge.

Engineers, Manufacturers and Erectors of Steel Structures.  
CAPACITY 135,000 TONS.

Railway and Highway Bridges, Swing and Bascule Spans, Buildings of all kinds, Hemispherical Bottom and other Tanks, Transmission Poles and Towers, Riveted Pipe, Caissons, Barges, Turntables, Electric and Hand Power Cranes, Hoisting Appliances, Lift Locks, Hydraulic Regulating Gates, etc. Gear Cutting and General Machine Work.

LARGE STOCK OF STANDARD STRUCTURAL MATERIAL AT ALL WORKS.



# SAFETY FIRST

The best way to educate your employes to the safety habit is by signs.

The "SAFETY FIRST" sign will be before them many times each day and warn them of the constant danger they are subject to in the course of their duties.

Enamelled iron signs, on account of the brilliancy of their colors, attract immediate attention. They never fade and are as good in ten years' time as the day they are put up.

We make to order in any colors, with any lettering or design.

We will be pleased to quote you prices and submit sketches on request.

**Acton Burrows**  
*Limited*

70 Bond Street, Toronto

## STEEL BACK BRAKE SHOES



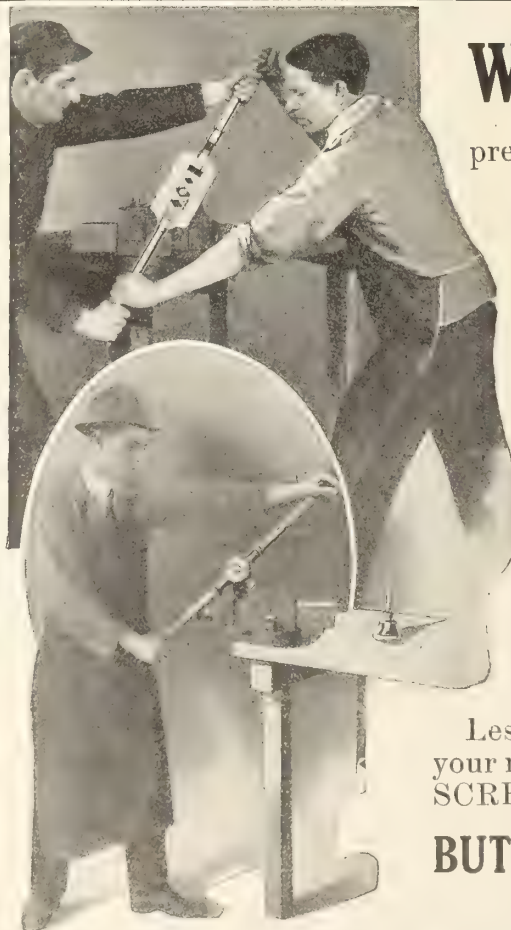
wear as shown above, before they are scrapped and they wear safely, too. You get your full money's worth in satisfactory service from them always.

Steel Back Car, Coach and Driver Shoes are absolutely essential for safe and economical operation in heavy and high-speed service.

Manufactured in Canada.

**AMERICAN BRAKE SHOE & FOUNDRY CO.**

The HOLDEN CO., Ltd., Agents, 354 St. James St., Montreal.



## Which Method

prevails in your plant? Does it take two men to do one man's work.

Why don't you replace that old antiquated tool with a new up to date

### Reece's New Screw Plate

These pictures do not exaggerate conditions as you can actually see them, if you will visit Machine Shops throughout the country.

Lessen your cost by giving your mechanics a REECE'S NEW SCREW PLATE.

**BUTTERFIELD & CO., Inc.**  
ROCK ISLAND, QUE.



# DROP FORGINGS

Made in the Champion Way

Also Steam Hammer and Heading Machine Forgings

Let us have your Blue Prints

— Foundry Chaplets —

## THE CHAMPION MACHINE & FORGING COMPANY CLEVELAND, OHIO

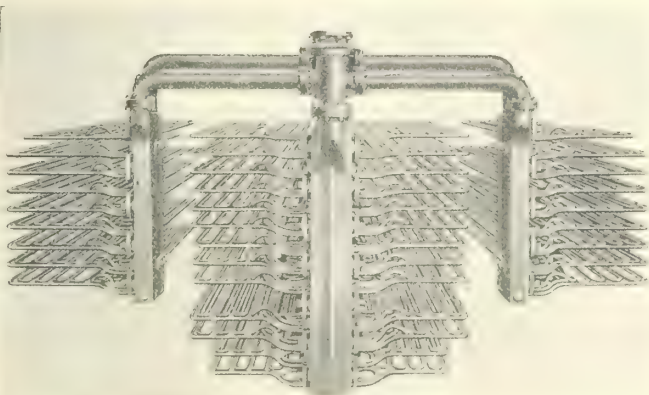
New York Office:  
30 Church St.

Philadelphia Office:  
Bourse Building.

Detroit Office:  
H. B. Kendal,  
56 Cadillac Sq.

Chicago Office:  
1623 Monadnock Block.

## LESS BUNKER SPACE = GREATER CARGO CAPACITY



Bunker space is fixed by the amount of coal burned between desirable coaling ports.

Any reduction in coal burned between these ports means that bunker space may be converted into revenue cargo holds.

From 10% to 20% less coal is burned, and the same speed maintained by steamers whose boilers are equipped with our

### FIRE TUBE MARINE SUPERHEATERS

than would be possible with the same steamers using saturated steam.

You need not wait for new steamers before availing yourself of these advantages, as the superheater may readily be installed in existing boilers.

Let us submit designs.

### LOCOMOTIVE SUPERHEATER COMPANY

30 Church Street, New York

Peoples Gas Bldg., Chicago

The Travelling Public is  
a Critical Public

### DREWRY'S AMERICAN STYLE RICE BEER

Meets the most critical taste.  
Better, and costs less than Imported.

In cases of Pints or Quarts.

E. L. Drewry, Ltd., Winnipeg

Revised and New Edition

### STOVEL'S COMMERCIAL ROUTING AND SHIPPERS MAP of Western Canada

Showing All Towns on Railway Lines.

Most efficient routing and record map published

**STOVEL & COMPANY, LIMITED,**  
Engravers and Publishers, WINNIPEG, MAN.

**IT PAYS** to carry an advertisement in the CANADIAN RAILWAY AND MARINE WORLD every issue of the year because you obtain proportionately better **RESULTS**





### Celebrated "H & E" Lifting Jack

Our Patent Ball-Bearing Geared Jacks are Ideal in Railroad and heavy Construction Work.

These Jacks are built for heavy service in bridge, roundhouse and wrecking work, are made with great care from the very best material and will be found the most satisfactory jacks for the purpose on the market.

### Canadian Brakeshoe Company, Limited

SHERBROOKE, QUE.

Sole Agents for Brakeshoes for Canada outside of B.C., Messrs. Taylor & Arnold, Limited, Montreal and Winnipeg. Sole Agents for B.C., The B.C. Equipment Co., Vancouver, B.C. Sole Agent for Lifting Jacks for Canada, F. H. Hopkins & Co., Montreal.

### High Grade Electric STEEL CASTINGS MANGANESE STEEL

For Crusher Jaws and Heavy Wear Parts

### BRONZE

M.C.B. Standard Journal Bearings and Engine Bearings

Improved Reinforced Steel-Backed

### BRAKESHOOES

Locomotive Driver and Truck Shoes. Freight and Passenger Car and Electric Car Shoes.

*Rails, Cars,  
Locomotives  
and Contractors' Equipment*

**IMMEDIATE  
SHIPMENT**

**John J. Gartshore**

58 FRONT ST. WEST

**TORONTO**

## MALLEABLE IRON CASTINGS

Our experience and unexcelled equipment assure you the best service in high class castings.

We also manufacture a full line of malleable cast iron and flanged pipe fittings.

**International Malleable Iron Co., Limited**

GUELPH, ONTARIO



### MORROW Twist Drills

Your aim is economy in shop practice, with accuracy of results; therefore best tools obtainable are none too good. It will pay you to buy Morrow's.

**John Morrow Screw & Nut Co., Limited, - Ingersoll, Ontario**

"MORROW DRILLS ARE GOOD DRILLS"

### NICKEL SHOT—HIGH AND LOW CARBON INGOTS—TWO SIZES, 25-LB., 50-LB.

Electrolytic Nickel—99.80%

Prime Metals for the manufacture of Nickel Steel, German Silver, Anodes, and all remelting purposes. Our Nickel is produced as rods, sheets, strip stock and wire.

**MONEL** We are Sole Refiners of this natural stronger than steel, non-corrosible alloy. Produced as rods, flats, castings, sheets, strip stock and wire. Ask for descriptive booklet.

Send inquiries direct to us.

**THE INTERNATIONAL NICKEL COMPANY, - 43 Exchange Place, New York**

### FOR TICKET CASES AND COMMERCIAL FURNITURE

of all descriptions to stock  
or special design, apply to

The Canadian Office and School Furniture  
Co., Limited  
Preston : Ontario

## Car Closets

FLUSH OR DRY

**DUNER CO. 101 S. CLINTON ST.  
CHICAGO**

## The Ottawa Car Manufacturing Co., Limited

*Builders of*

**ELECTRIC CARS, FINE  
CARRIAGES, WAGONS,  
SLEIGHS, ETC.**

Office and Works

**Slater St. - Ottawa**

C. W. Sherman, Pres. and Gen. Mgr.

F. W. Baillie, Vice-Pres.

J. E. Hammond, Secy.-Treas.

## Dominion Steel Foundry Company, Limited, Hamilton, Ont.

Locomotive Frames

Car Bolsters

Car Castings

Heavy Machinery Castings



**Professional Cards****JACOBS & DAVIES, Inc.**  
Consulting Engineers

MONTREAL LONDON NEW YORK  
Foundations, Subaqueous and Land Tunnels, Subways, Railways, Harbours, Waterpower Development, Examinations, Reports.  
Montreal Office: Eastern Townships Bank Building

**C. E. A. CARR CO.**

RAILWAY SUPPLIES  
Reports on Electric Railways and Electric Light Properties.  
ESTIMATES PREPARED.  
Telephone Main 2986.  
2 Toronto Street, Toronto.

**THE ARNOLD COMPANY**

ENGINEERS—CONSTRUCTORS.  
ELECTRICAL—CIVIL—MECHANICAL  
Reports, Design and Construction  
Complete Railway Shop and Terminal Properties—  
Electrification of Steam Railroads.  
Our Experience Covers Thirty Five Plants  
Chicago, Illinois

**Patent Solicitors****PATENTS**

HERBERT J. S. DENNISON,  
Mechanical Engineer. Patent Attorney and Expert.  
Patents, Trade Marks, Designs, Copyrights, and Infringements  
20 yrs. experience in Patents and Practical Engineering  
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Write For Booklet

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Hamilton, Ont., May 1st, 1915.

NOTICE is hereby given that the Annual General Meeting of the Shareholders of this Company, for the election of a Board of Directors, and for the transaction of such other business as may be brought before the meeting, will be held at the office of the Company, in the City of Hamilton, Province of Ontario, on Tuesday, June 1st, 1915, at 11 o'clock in the forenoon.

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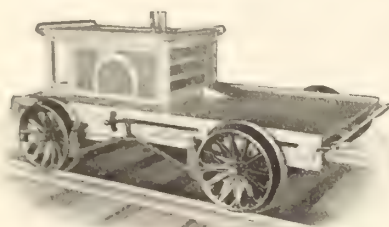
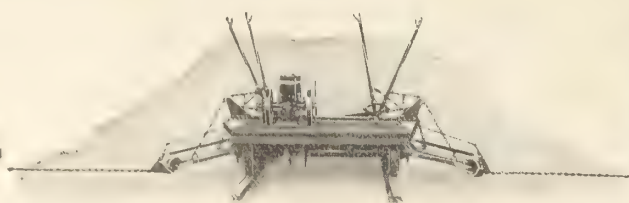
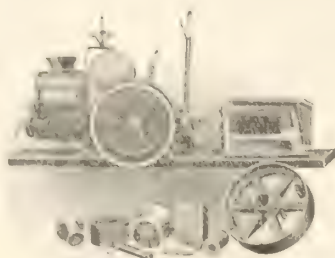
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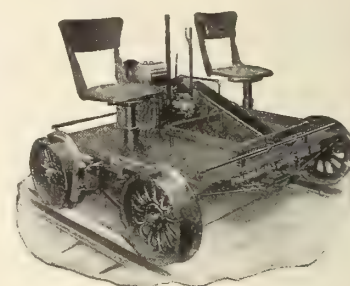


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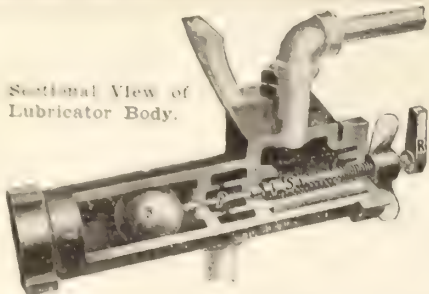
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VAPOR SYSTEM AND STEAM HEAT SPECIALTIES.

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Commercial Acetylene furnishes a strong, penetrating light without being blinding. Nothing to get out of order. Economical to maintain. Small gas cylinder supplies several weeks' lighting.

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Commercial Acetylene furnishes an ideal system for all kinds of passenger cars. It combines efficiency and economy. Standard cylinder supplies from one to two months' lighting of the average car.

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Commercial Acetylene furnishes an absolutely reliable light. Failures eliminated and cost of maintenance reduced. Cylinder placed at foot of pole supplies several months' lighting without attention.

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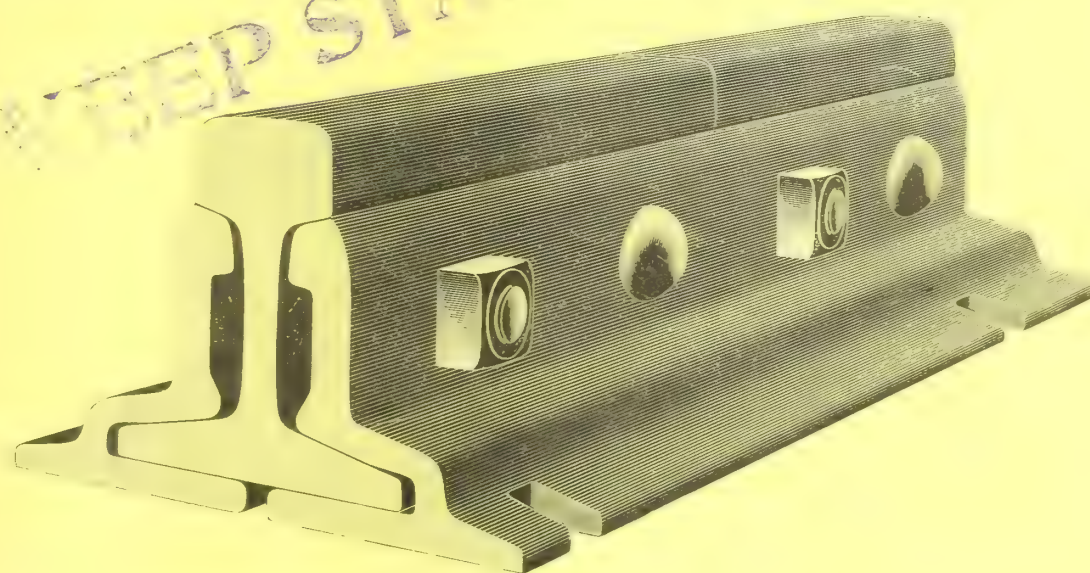
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# The Rail Joint Company of Canada Limited

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Makers of Base-Supported and One Hundred Per Cent. Rail Joints for Standard, Girder, and Special Rail Sections. Also Joints for Frogs and Switches; Insulated Rail Joints, and Step or Compromise Rail Joints. Patented in Canada and the United States.



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## THIS COMPANY'S PRODUCT

Is an acknowledged standard, not in an experimental stage; HIGH CARBON STEEL of the best quality used exclusively; Hot-Worked; Oil-Quenched when desired.

See our exhibit at the Panama-Pacific International Exposition, Palace of Transportation, Block 1, East End.

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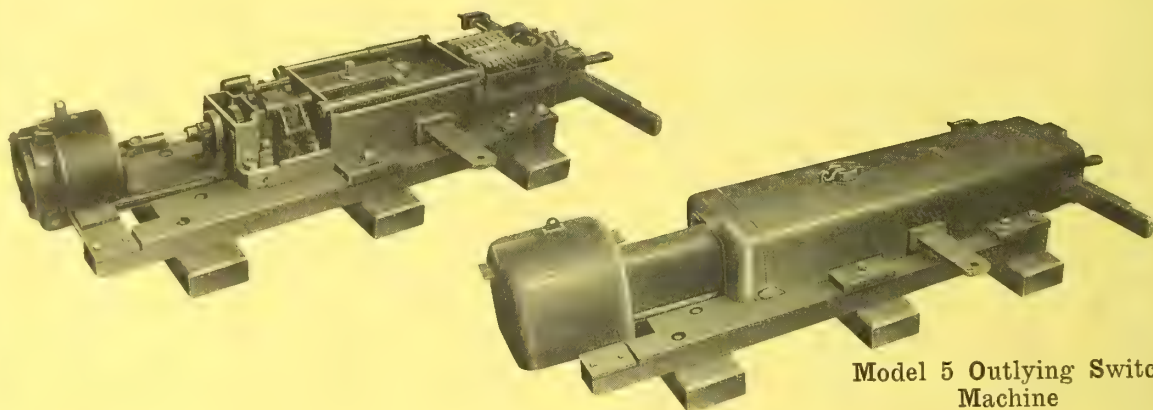
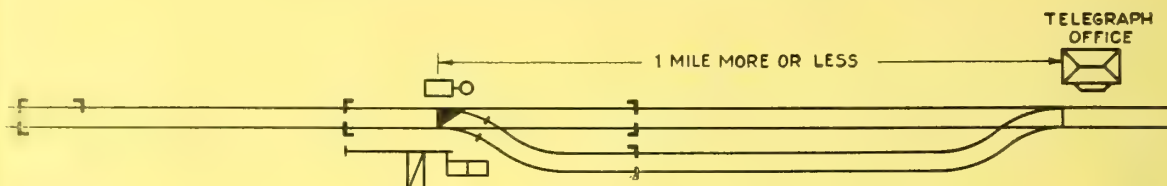
Boston, Mass., India Bldg.; Chicago, Ill., Railway Exchange Bldg.; Denver, Colo., Equitable Bldg.; New York City, N.Y., 185 Madison Avenue; Philadelphia, Pa., Pennsylvania Bldg.; Pittsburg, Pa., Oliver Bldg.; Portland, Ore., Wilcox Bldg.; St. Louis, Mo., Commonwealth Trust Bldg.; Troy, N.Y., Burden Avenue.

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# Consider the Cost of Stopping Your Trains at Junction and Passing Track Switches in

comparison to the cost of a Model 5  
Low-voltage Switch Machine Layout—



Model 5 Outlying Switch Machine

The elimination of one train stop per day will equal the total cost of maintenance, operation, interest and depreciation of a Model 5 Outlying Switch Layout.

## *Additional Stops are Dollars Saved.*

Four or more train stops per day eliminated will show a large yearly saving.

You not only effect a large yearly saving on a small investment, but you eliminate delays of several minutes for each train entering

and leaving the siding, and thus facilitate traffic movements.

Further, you secure an efficient switch lock and insure a stop indication unless the switch points are in proper position.

With these facts before you, why not protect each outlying switch which will warrant the investment?

Ask our nearest office for further information.


**"Safety First"**
  
**GENERAL RAILWAY SIGNAL COMPANY**  
**OF CANADA LIMITED**

Office and Works  
Lachine, Quebec

Branch Office  
Winnipeg, Man.

Please give further information on the  
G. R. S. Model 5 Switch Machine.

Name .....

R. R. Title .....

R. R. ....

Location .....



# Canadian Railway AND Marine World

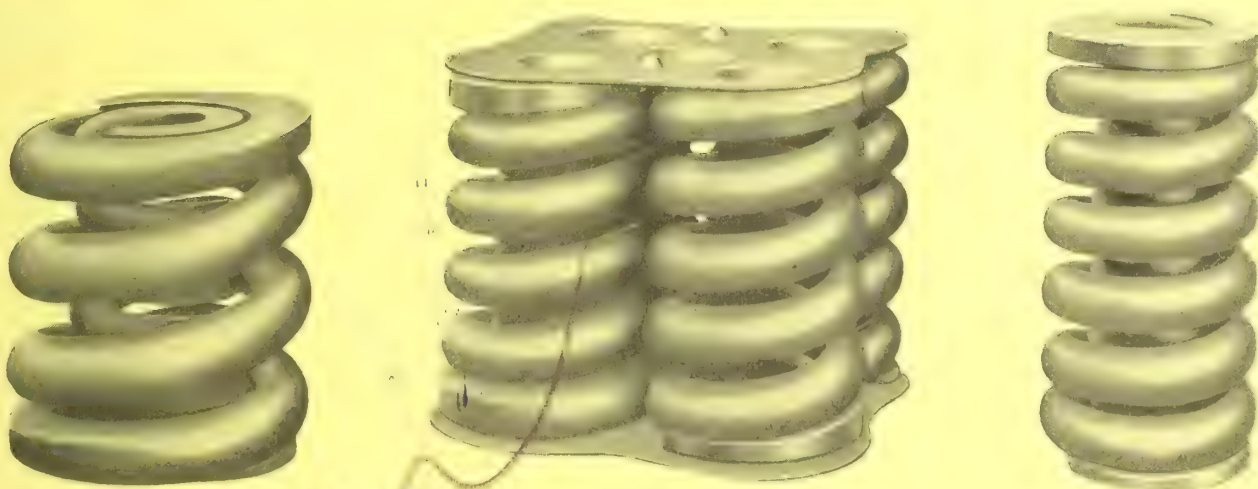
ESTABLISHED 1898.

Number 209

TORONTO, CANADA, JULY, 1915

Subscription Rates, Page 265

## Railway Springs



### Russian Government Car Springs

Draft, Truck, and Buffer Springs manufactured by us for the Eastern Car Company Ltd., New Glasgow, N.S. for use under the 2,000 box cars ordered by the Russian Government.

We manufacture every variety of spring.

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Office and Works, MONTREAL

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# Westinghouse Induction Motors

Drive Every Kind of Machine Successfully

They are popular with the power user because:

He finds his power bills low.

His motor attendance and maintenance expense is almost nothing.

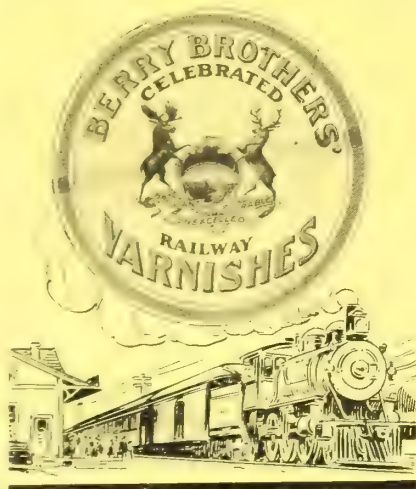
His machines are always ready to operate whenever wanted.

Many Westinghouse Induction Motors have been in continuous service for years and are still as good as ever.



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 Traders Bank Bldg. 52 Victoria Square Ahearn & Soper, Ltd. Telephone Bldg. Telfer Bldg. 158 Portage Ave. E. Grain Exchange Bldg. Dominion Bldg. Bank of Ottawa Bldg.



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All the experience of those who make, sell and use varnishes have been embodied in the progress of BERRY BROTHERS' VARNISHES. These varnishes are the result of world-wide and time-tested experience, and therefore meet needs better.

*Let us send you some interesting literature on varnish problems*

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## Why Cars "De Luxe" Are Fitted With Fabrikoid Curtains

Fabrikoid harmonizes with every detail of cars "De Luxe." It is as pliable as the softest leather; but it never splits. It looks like the richest curtain material on the market; yet it never creases, cracks or scales. In short



REG. U. S. PAT. OFF.

measures up to every requirement for car curtains. Besides, DU PONT FABRIKOID can be cleaned with soap and water; it is weather and water-proof; cuts your car curtain costs and is exceptionally low in first cost. Investigate—better still, write for samples and convince yourself.

# DuPont Fabrikoid Company

WILMINGTON, DELAWARE

Factories at Newburgh, N. Y. and Toronto, Canada

WENDELL & MacDUFFIE CO.

R. R. Department Representatives

60 Broadway, New York, N. Y.

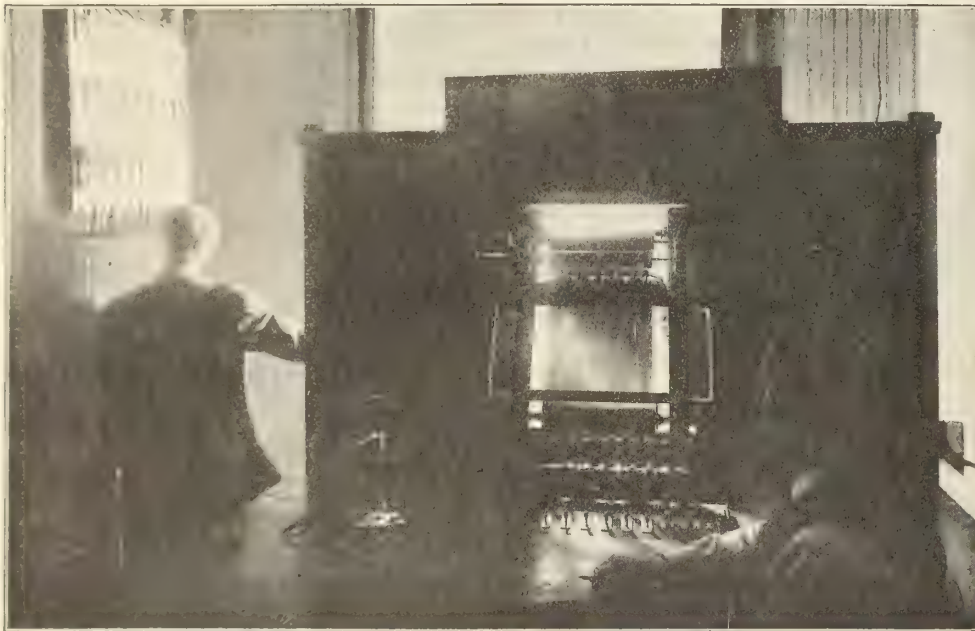


# Meeting One Financial Obstacle to Adequate Signal Protection

There is little doubt that there would be a tremendously greater amount of mileage protected by automatic block if first cost were the only difficulty to be encountered. The great difficulty, however, in the universal use of fixed automatic block signals is found in the continuous cost of maintenance.

The advantage in this respect of

## Simmen Automatic Block Cab Signals



is shown by the fact that none of the four roads which are operating the Simmen System have found it necessary to provide any special organization or additional labor for inspection purposes.

The reason for this is that the track and overhead installation of the Simmen System is so simple (involving no apparatus along the track except standard telephone overhead construction and simple signal rails) that the regular track and line maintenance labor is ample to care for these elements.

All operating electrical apparatus is either in the cab or in the dispatcher's office.

The cab apparatus is easily inspected when the car is in for regular inspection.

The apparatus in the dispatcher's office is readily inspected and cared for by the dispatcher, with the occasional assistance of a lineman.

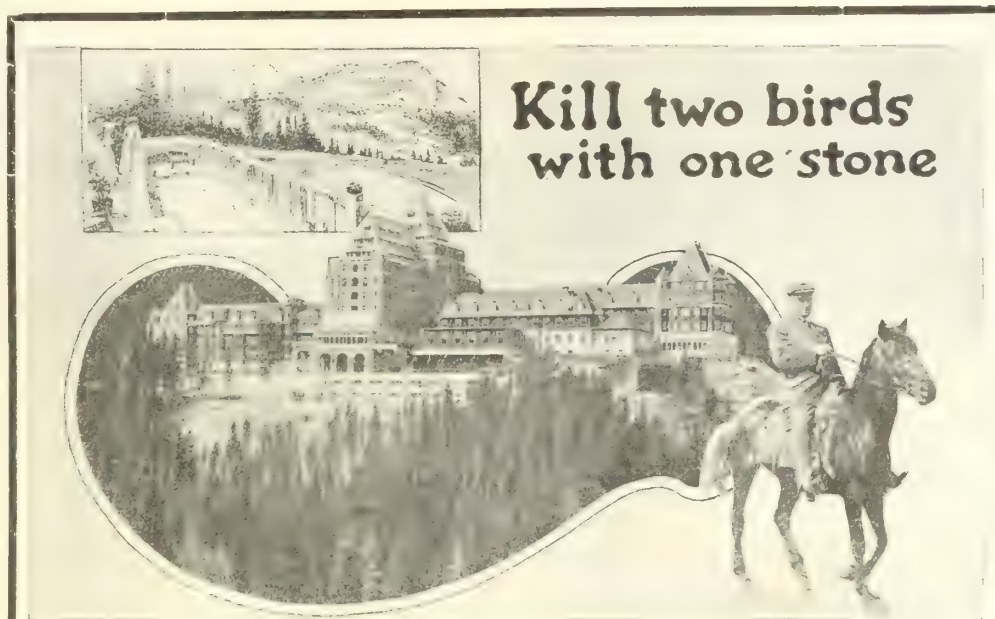
This enormous comparative saving in maintenance costs is proved by the experience of the four roads on which the **Simmen System** is now, and has for some time been, standardized.

The importance of this fact in any signal installation is obvious.

## THE NORTHEY-SIMMEN SIGNAL CO., Ltd. TORONTO

Simmen Automatic Railway Signal Co., Buffalo





and travel via THE  
**CANADIAN ROCKIES**  
to the  
**PANAMA PACIFIC EXPOSITION**

If you are planning your 1915 trip to San Francisco, make sure your ticket reads via Canadian Pacific, otherwise you will miss the grandeur beauty of nature's most stupendous works—The Canadian Rockies.

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Are important tourist stop-over points on the Canadian Pacific Railway route to the Pacific Coast. These have excellent hotel accommodation, with opportunities for riding, climbing, swimming, boating and golf.

Agents will personally call on you to arrange your itinerary.

Write, phone or call on nearest C. P. R. Representative.

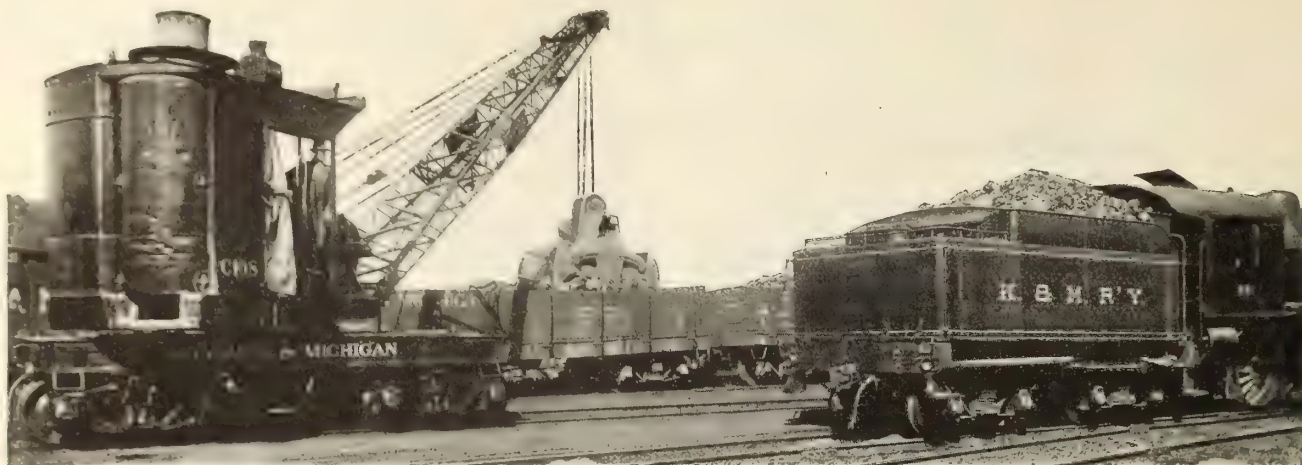
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Asst. Dist. Passenger Agent  
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When you are depending upon a locomotive crane for handling your coal you realize that it must be a **good** crane. You cannot have the crane continually breaking down, as it means a big loss in time.

## BROWNHOIST Locomotive Cranes

are being used to-day by railroad men because they realize that these cranes will do their work as it should be done. One road uses thirty of them. These cranes are built for hard, continuous service. And records prove that they will stand up under the severe working conditions. Ask the owners—they will tell you what Brownhoist cranes will do.

Write for our Catalog K, which shows how and where the Brownhoist Locomotive Crane is used.

**THE BROWN HOISTING MACHINERY CO.**  
**CLEVELAND, OHIO**

MONTREAL OFFICE, 145 St. James Street



# Galena-Signal Oil Company

Works

**Franklin, Pa., and Toronto, Ont.**

Canadian Sales Office—603 Shaughnessy Bldg., Montreal, Que.

Sole manufacturers of the celebrated GALENA COACH, ENGINE and CAR OILS, and SIBLEY'S PERFECTION VALVE and SIGNAL OILS.

GUARANTEE COST per thousand miles for from one to five years, when conditions warrant it.

Maintain EXPERT DEPARTMENT, which is an organization of skilled railway mechanics of wide and varied experience. Services of Experts furnished free of charge to patrons interested in the economical use of oils.

**STREET RAILWAY LUBRICATION A  
SPECIALTY**

USE

**Galena Railway Safety Oil**

in Headlights, Marker and Classification Lamps, to secure Efficiency of Service, Maximum Candle Power, Clearness of Light.

**Galena Long Time Burner Oil**

for use in Switch and Semaphore Lamps, and all lamps for long time burning, to avoid smoked and cracked chimneys and crusted wicks.

Tests and Correspondence Solicited.

**S. A. MEGEATH,**  
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**Highest  
Efficiency**

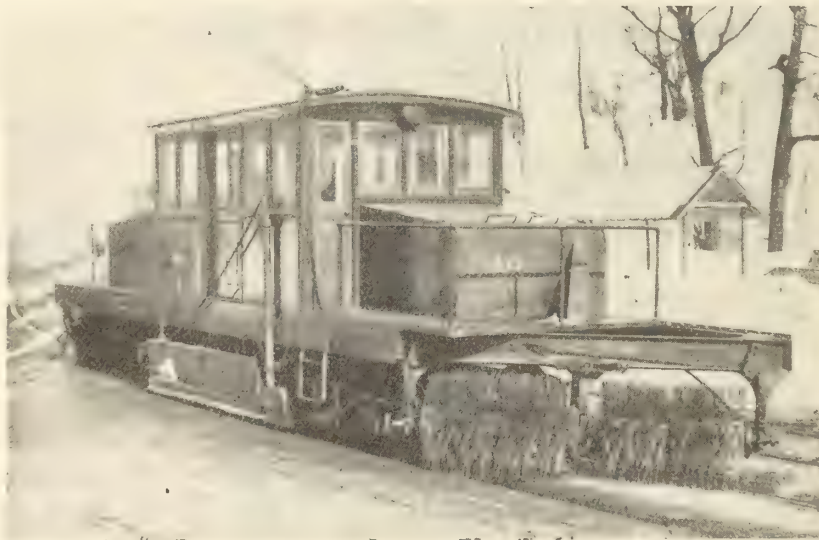
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MADE  
RIGHT**

**Lowest  
Upkeep  
Cost**

**The  
OTTAWA CAR  
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**are Designers and Builders of**

Electric City and Interurban passenger cars. Electric express cars and locomotives. Sprinklers and work cars. Car seats, car curtains and a very large variety of brass and bronze car fittings.



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**Always  
Ready  
for Service**

Satisfaction  
assured on all  
orders and deliveries  
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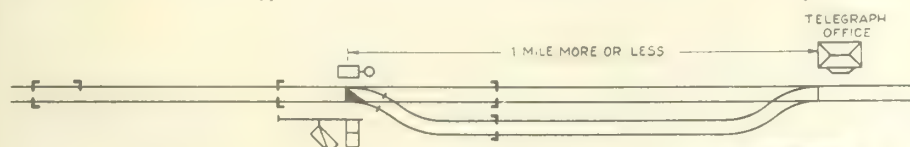
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**Remember the Address : COR. KENT AND SLATER STS., OTTAWA, ONT.**

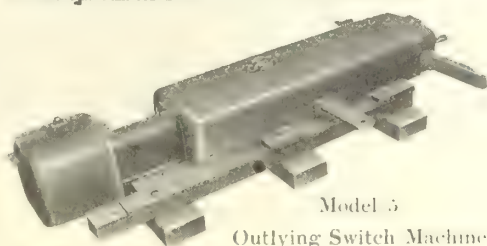


# Consider the Cost of Stopping Your Trains at Junction and Passing Track Switches in

## comparison to the cost of a Model 5 Low-voltage Switch Machine Layout



**T**HE elimination of one train stop per day would more than offset the fixed charges—interest on investment, depreciation and maintenance—of a Model 5 Outlying Switch Layout.



Model 5

Outlying Switch Machine

### Additional Stops Are Dollars Saved

Four or more train stops per day eliminated will show a large yearly saving.

You not only effect a large yearly saving on a small investment, but you eliminate delays of several minutes for each train entering and leaving the siding, and thus facilitate traffic movements.

Further, you secure an efficient switch lock and insure a stop indication unless the switch points are in proper position.

With these facts before you, why not protect each outlying switch which will warrant the investment?

Ask for further information.

## GENERAL RAILWAY SIGNAL COMPANY

### OF CANADA LIMITED



Office and Works  
Lachine, Quebec



Branch Office  
Winnipeg, Man.

1265



# The Steel Company of Canada, Limited

## HAMILTON, CANADA

### Special Steel Marine Forgings

When forgings are required to stand the strain of rough weather, and to prove themselves reliable and dependable, write us for particulars and prices.

We have the facilities for the production of heavy steel forgings of all kinds, including:

Connecting Rods

Crank Shafts

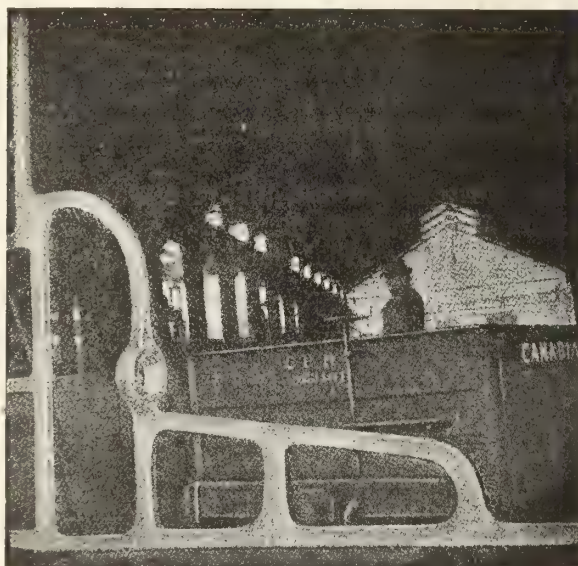
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**Stern Frame of Steamship Hamonic**

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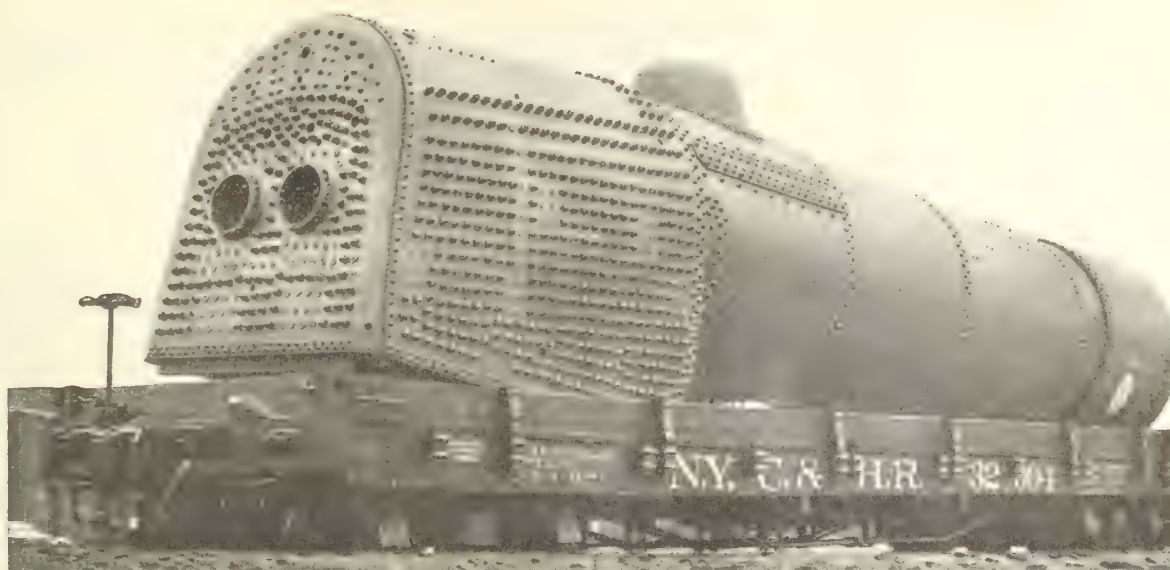
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VALUED NOT FOR WHAT IT COSTS  
BUT FOR WHAT IT SAVES—

It is quite difficult at times to determine the difference in the values of one article over another, for true values are oftentimes obtained only by service tests and experiments covering years of investigations and watchful attention.

**The true value of a staybolt** depends largely on what it can accomplish in the full scope of its usefulness over a long period of service, and in determining such, consideration should be given not only to the staybolt itself, but more particularly to what it accomplishes as a connecting member of the firebox in conserving and prolonging the life of the complete assemblage under all conditions of service.

**We recognize** that railroads are careful buyers—they have to be. The wisdom of obtaining net results at a minimum of expense in the use of their equipment over long periods of service, is the outcome of vast experiences, in which matters of true value regarding all purchases, are based not so much from the viewpoint of economy from first costs, as that obtained in the resulting or ultimate cost based on the service rendered.

**The Tate Flexible Staybolt** is designed and made to give satisfactory results in the final measure of its usefulness, as an economic, safe and reliable factor in reducing the costs of firebox repairs and maintenance. This fact has been demonstrated in all instances where the Tate Bolt has been used, and it is the only way by which we can prove and point to its true value as a staybolt.

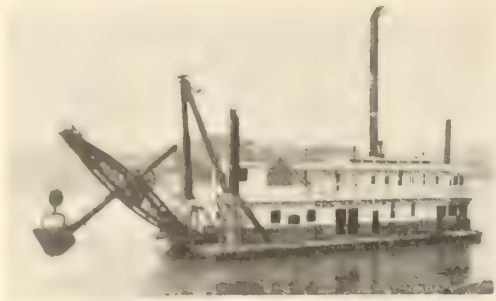
**SPECIFY AND APPLY THE TATE BOLT TO NEW FIREBOXES AND RENEWALS**

## FLANNERY BOLT COMPANY

Vanadium Building, Pittsburg, Pa.

Manufactured and Sold in Canada by Canadian Allis-Chalmers, Limited, General Offices, Toronto, Ont.





## “DOMINION WIRE ROPE”

MADE IN CANADA

And Stocks Carried in  
Montreal, Winnipeg and St. Catharines

Wire Rope for Dredges, Drag Line Excavators, Steam Shovels,  
Cranes, Derricks, Coal Towers, Towing, Etc.

**The DOMINION WIRE ROPE CO., LIMITED, MONTREAL**



## “Marion” Railroad DITCHERS

are specially designed for cleaning  
out or widening old ditches or cutting  
new ones along the right-of-way.

### —AUXILIARY USES—

They make excellent Revolving Shovels, Log  
Loaders, Locomotive Cranes, for handling  
Rails, Ties, Timbers, for Track-Laying pur-  
poses, Etc.

## “MARION” Scraper-Bucket Excavators

Built with Bucket Capacities  
Ranging from  $\frac{3}{4}$  to 6 cubic  
yards and Booms 40 to 115 ft.  
in length.

At present used in Canada on the  
Welland Canal and Halifax Harbor  
Work.



### BRANCHES

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1206 Union Trust Bldg., Winnipeg, Man.

VANCOUVER, B.C.

**F. H. Hopkins & Co**

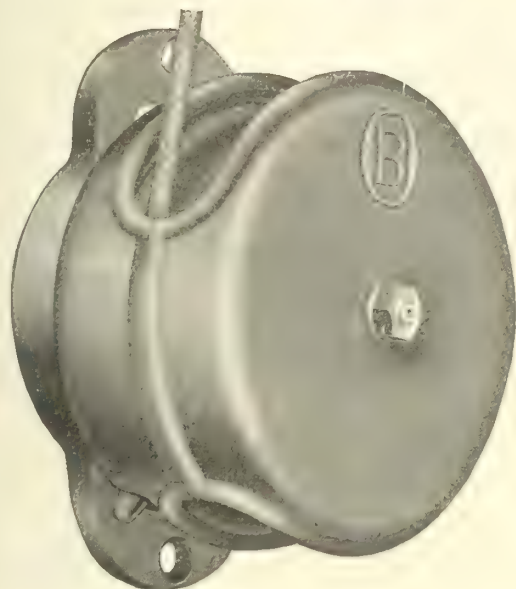
### HEAD OFFICE

**MONTREAL**



# O-B TROLLEY CATCHER

Approved by Railway Men



Here are a few of the many favorable comments we have received:

"Goods furnished on trial have proved satisfactory, especially the trolley catcher."

"Furnish just the same as those shipped on trial which were accepted."

"You may bill us for the same at your earliest convenience. We feel sure they are well worth the price."

We know the O-B Catcher is right and we want to show you. We will send you one for trial, to be returned at our expense if you are not pleased. Why not write to-day?

## The Ohio Brass Co.

Mansfield, Ohio, U.S.A.

# GENERAL SERVICE CARS

## OTIS DUMP CARS

PATENTED



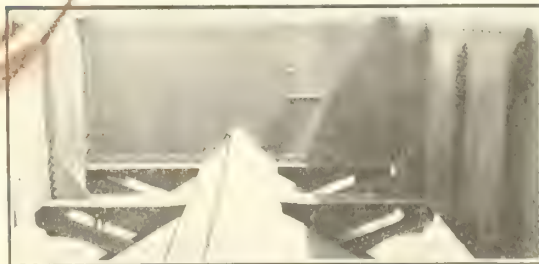
In Ore Service.

THERE ARE THOUSANDS OF OTIS CARS IN USE IN COAL AND GENERAL SERVICE. A SIMPLE EASY OPERATING LEVEL FLOOR GONDOLA CAR THAT DUMPS THE ENTIRE LOAD.

Made in All Sizes and Capacities for Regular or Special Requirements.

THE MOST PRACTICAL CAR FOR ALL BULK FREIGHT.

DUMP THE MATERIAL AND SAVE TIME AND MONEY. ALWAYS READY FOR USE.

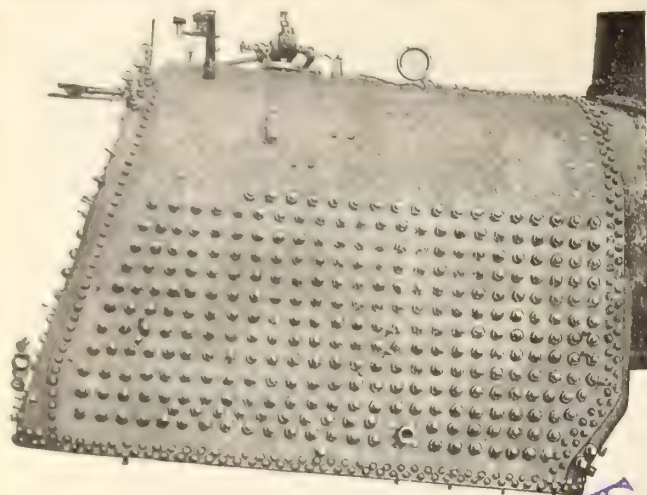


All Steel Car With Doors Open.

## THE HART-OTIS CAR CO., LIMITED : MONTREAL

—SOLE PATENTEES FOR GENERAL SERVICE CARS FOR CANADA—





## The Perfect Stay

*For Locomotive Fire Boxes*

## Tate Flexible Staybolts

Are now in use on 425 Railroads of the United States as well as the main Railroad Systems of Canada.

RECOGNIZED AS THE MOST ECONOMIC FLEXIBLE STAYBOLT now in the market, because the Tate Bolt has demonstrated its true functions as a mechanical appliance to service fire box requirements.

MANY RAILROAD SYSTEMS have kept accurate service records and show remarkable increase in the earning power of the locomotives that have been equipped with complete installations of the Tate Flexible Staybolt.

**FLANNERY BOLT COMPANY, Vanadium Building, Pittsburgh, Pa.**

Manufactured and sold in Canada by Canadian Allis-Chalmers, Limited, General Offices, Toronto, Ont.



### GRAND TRUNK HOTELS

#### The Chateau Laurier, Ottawa, Ont.

Accommodation 350 Rooms. Rates  
\$2.00 per day and upwards. European Plan.

#### The Fort Garry, Winnipeg, Man.

Accommodation 300 Rooms. Rates  
\$2.00 per day and upwards. European Plan.

#### The Macdonald, Edmonton, Alta.

Accommodation 250 Rooms. Rates  
\$2.00 per day and upwards. European Plan.

Hotels under construction—  
The Qu' Appelle, Regina.  
The Prince Rupert, Prince Rupert.

G. T. BELL,  
Passenger Traffic Manager,  
Montreal, Que.

## Excellence in Railway Service

is expressed in what the

### Grand Trunk System

is offering the Travelling Public of Canada.

UNEXCELLED ROAD BED  
SUPERB DINING CAR SERVICE  
COURTEOUS ATTENTION  
MODERN EQUIPMENT

The Grand Trunk System reaches all trade centres in Eastern Canada, and is now a large factor in Western Canada traffic through the Grand Trunk Pacific Railway, recently completed to the Pacific coast.

### The International Limited

Canada's Train of superior service, leaves Montreal at 10.15 a.m. daily, arrives Toronto 5.45 p.m., London 8.53 p.m., Detroit 10.58 p.m., Chicago 8.00 a.m. Observation, Library, Compartment Cars. Modern in every detail. Electric lighted.

W. P. HINTON,  
Assistant Passenger Traffic Manager,  
Montreal, Que.



# The Science of Water Treatment

The Dearborn Company was organized because of the conviction on part of its founders that a scientific handling of the water treatment question was the only solution for the steam user of the troubles constantly arising as a result of scale formation, foaming, corrosion and pitting of boiler tubes, with all the attendant injury to the boilers, loss of heating efficiency, and waste of fuel.

Periodical removal of scale is unsatisfactory since there is a constantly increasing ratio of heat loss and fuel waste—as the scale gradually forms—aside from the injury to the boilers.

The Practical Method is **Prevention** and this can be effectively done only by attacking the mineral ingredients in the water with the proper reagents, changing their nature and character and eliminating their harmful qualities.

The application of scientific knowledge is most important in the choosing of reagents. Provision must be made for the various minerals present in the water, determined by analysis, as well as for the by-products that will be formed as a result of reactions brought about. Failure to give this phase due consideration may result in more serious trouble than the first condition of the water produced.

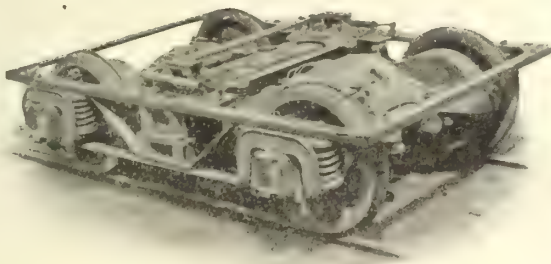
Unscientific "dope" compounds, ineffective and often harmful, have caused steam users endless annoyance and trouble.

We'd like an opportunity to demonstrate results by our methods. Gallon samples of the water supplies for analysis constitute the first step. May we have them?

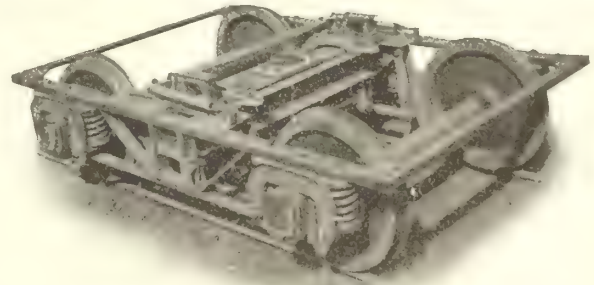
**Dearborn Chemical Company of Canada, Limited**

Office and Works,  
1220-1230 Dundas Street, TORONTO, ONT.

# The "National" Truck for Interurban Service



WITH MOTORS.



WITHOUT MOTORS.

When we can say that we have never had a dissatisfied customer it means that the "NATIONAL" Truck has unusual merit. It solves the problem of minimum weight with maximum efficiency and smooth riding qualities.

"There are no rough spots on the road that uses the "NATIONAL" Truck.

**National Steel Car Company, Limited**

Montreal Office  
Shaughnessy Building

ADDRESS INQUIRIES TO HAMILTON

Works and Operating Offices  
Hamilton, Ontario



MODERN HIGH-CLASS  
**ROLLING STOCK**



**Passenger, Freight  
 and  
 Electric Railway,  
 Car Castings,  
 Forgings and Repair  
 Parts.**

**CROSSEN CAR COMPANY, LTD.**

COBOURG      -      ONTARIO



**The No. 25  
 McLain Pressed  
 Steel Headlight**

is equipped with triple nickel-plated polished reflector of special parabolic design which centralizes the rays of a concentrated filament Mazda bulb perfectly focused, throwing a straight, strong beam of light down the track, far ahead of the car.

Extremely light—weighing three pounds less than any other Headlight.

No sacrifice has been made to attain this lightness of weight for the McLAIN No. 25 is as strong as any Headlight made, and has an illuminating power in excess of other Headlights employing an incandescent globe.

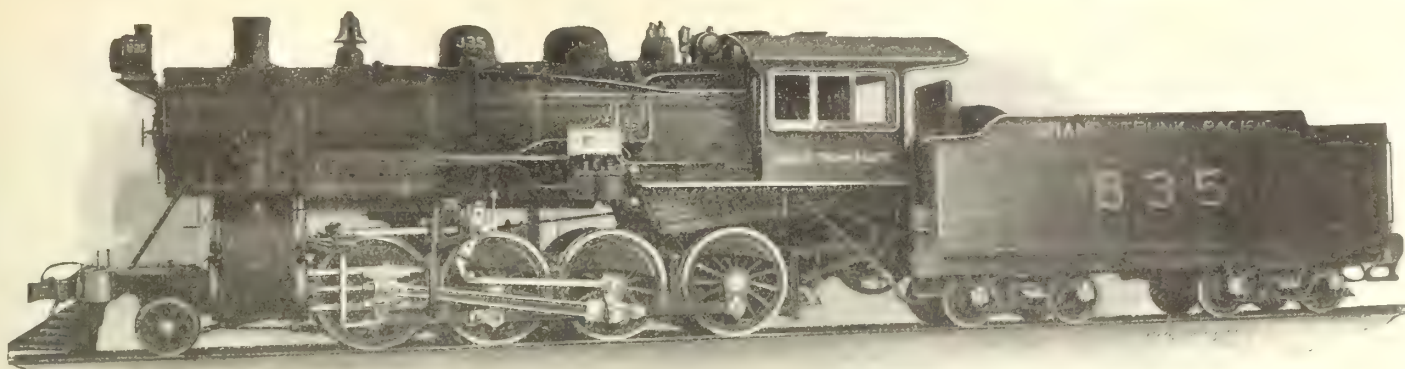
Has extended dash—Dust and waterproof.

Guaranteed to give good service.

Write for booklet and prices.

**The Trolley Supply Co.**  
 Canton, Ohio





Consolidated Type Locomotive Built for Freight Service on the Grand Trunk Pacific Railway.

# LOCOMOTIVES

Long experience, new equipment, efficient management and expert workmen, are guarantees that our Locomotives will give record service. Over 1,200 Locomotives have been built at our Works since the erection of the plant. We are builders of Simple and Compound Locomotives adapted to every variety of service, for Railway Contractors, for Industrial Purposes, Mines, all classes of Railway Work, etc.

We are also builders of stationary boilers, suitable for contractors and industrial plants. Grey iron castings—any size or shape—ordinary or intricate—made promptly. New foundry, splendidly equipped. We would be pleased to quote on castings—singly or by contract. We also make drop forgings of all descriptions.

**CANADIAN LOCOMOTIVE CO., Limited, Kingston, Ontario**

## Heavier Trains—Less Coal and Water Per Trip



PACIFIC TYPE LOCOMOTIVE — INTERCOLONIAL RAILWAY.

Total weight of engine, 243,500 pounds; weight on drivers, 154,000 pounds; diameter of drivers, 73 inches; boiler pressure, 180 pounds; cylinders, 23½ x 28 inches; maximum tractive power, 32,400 pounds.

On a 185 mile run at an average speed of 40 miles per hour, these new Pacific type locomotives handle 10 cars and consume 12,884 pounds of coal and 9,750 gallons of water per trip.

Pacific type locomotives built five years ago, handled 9 cars on this same run at the same speed, but consumed 17,620 pounds of coal and 14,250 gallons of water per trip.

This is a saving of 26.9 per cent. in coal and 31.6 per cent. in water, with one extra car.

**MONTREAL LOCOMOTIVE WORKS, LIMITED,**  
DOMINION EXPRESS BUILDING, MONTREAL, CANADA



# Nova Scotia Steel and Coal Co., Limited

*Manufacturers of*

MARINE, RAILWAY AND GENERAL ENGINEERING FORGINGS OF ALL SHAPES AND UP TO 40 TONS IN WEIGHT, MADE FROM BEST ORDINARY OR HARMET FLUID COMPRESSED OPEN-HEARTH STEEL. OUR FORGE IS EQUIPPED WITH THE MOST MODERN STEAM HYDRAULIC PRESSES.

RAILWAY TRACK MATERIAL, fish plate, tie plate, track bolts, spikes, tee rails—12 to 40 lbs. per yard.

ROLLED STEEL FOR CAR BUILDERS' USE: Spring, machinery, tire, angle, and merchant bar steel, bright compressed shafting, rivets, tank plate—12-gauge up to 1" and 50" wide cold twisted steel bars for reinforced concrete work.

ALSO MINERS AND SHIPPERS OF THE CELEBRATED "OLD SYDNEY" COAL.  
HIGH CALIFORIC VALUE—LOW ASH—UNEXCELLED FOR STEAM-RAISING PURPOSES.  
BEST HOUSE COAL MINED IN CANADA.

Collieries, Iron and Steel  
Furnaces:  
SYDNEY MINES, C.B.

Coal Shipping  
Piers:  
NORTH SYDNEY, C.B.

Finishing Mills, Forge, and  
Engineering Shops:  
NEW GLASGOW, N.S.

ENQUIRIES SOLICITED

Western Steel Sales Office  
Room 14, Windsor Hotel,  
Montreal, Que.

Western Coal Sales Office:  
219, Board of Trade Bldg.,  
Montreal, Que.

Head Office:  
**NEW GLASGOW, N.S.**

## FOR PACKING



Style No. 3200

**THE GARLOCK PACKING CO.**  
HAMILTON ONTARIO

CALGARY  
TORONTO

BRANCHES:



MONTREAL  
WINNIPEG

Locomotive Throttles  
Use Garlock Style Number 3200.

Air Pump Piston Rods  
Use Garlock Style Number 2200.

Ball and Slip Joints  
Use Garlock Style Number 150.

Marine Engine Piston Rods  
Use Garlock Style Number 200.

Cold Water Piston Rods  
Use Garlock Style Number 99.

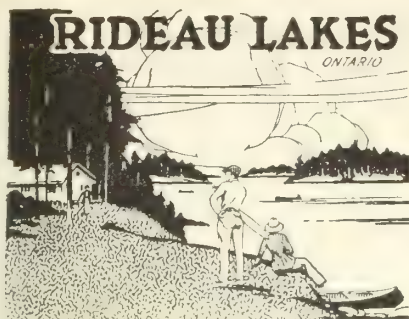
Inside Packed Plungers  
Use Garlock Style Number 260.

Outside Packed Plungers  
High Pressure Cold Water  
Use Garlock Style Number 960.

Outside Packed Plungers  
High Pressure Hot Water  
Use Garlock Style Number 1907.

These Packings are Guaranteed to give Satisfactory Service under the above conditions.





## Sportsmen and Vacationists Can Now Easily Reach the Rideau Lakes District

Spend a short or long outing here in this wonderful recreation land of superb bass fishing.

Splendid canoe routes and sites for camping and summer cottages among the many small islands.

GET THESE FREE BOOKS—"Lake St. Joseph Hotel, Quebec"; "Where to Fish and Hunt"; "Muskoka's Lake Shore Line"; "Outdoors in Canada"; "Summer Resorts Along the Road by the Sea."

The Canadian Northern Ry. will take you to Canada's finest recreation spots—Muskoka Lakes, Georgian Bay and Parry Sound, Lake St. John District, Lake Edward, Quebec, and many others.



For further particulars as to rates and service apply to nearest C.N.R. Agent, or General Passenger Department, 68 King Street East, Toronto, Ontario.



## STEEL SHIPBUILDERS

### Engineers and Boilermakers



Dredges, Hydraulic and Dipper Type; Steel Steamers, full Canal Size; Tugs, Barges and Scows

*Marine Engines and  
Boilers, all Sizes*

Steel Tug "Frederickton" built for the Dominion Government, 80 feet length, 20 feet breadth, 10 feet draught, compound marine engine, 12 x 26 x 18, Clyde boiler 10 feet x 11 feet, 145 lbs. steam.

## Polson Iron Works, Limited

Works and Office, Esplanade East, Toronto



# PEDLAR'S "PERFECT" PRODUCTS

## MADE IN CANADA

### PEDLAR'S "PERFECT" CULVERTS



have proven to be the least costly and most satisfactory for all forms of culvert construction. Made of heavy gauge, anti-corrosive **TONCAN** metal possessing wonderful strength, ductility and malleability. Used and recommended by the leading railways, street car systems, municipal corporations, engineers and contractors, both at home and abroad.

The narrow and deep lateral corrugations give these culverts ample strength to resist exterior stress from rolling loads, while its elasticity permits of the preservation of a "springy" road bed.

Easy to Haul—Easy to Install—Not affected by frost—No cost for upkeep.

Shipped assembled in lengths up to 40 feet—coupling bands supplied free for greater lengths. Diameters from 8 to 84 inches—special sizes made to order.

Write for complete Culvert Reference Book No. 4-R.M. containing drainage tables, and important data.

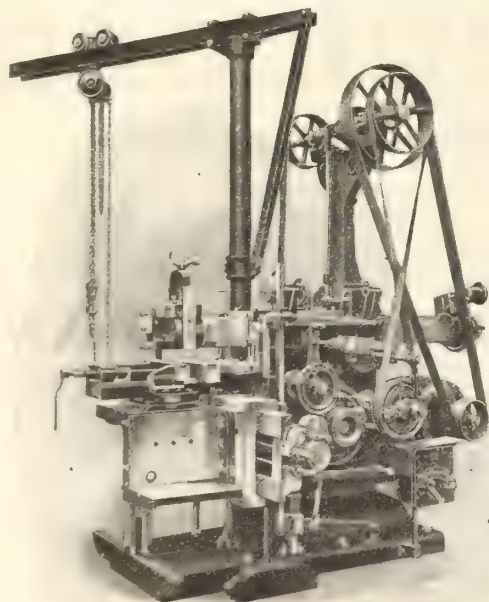
Address Nearest Branch.

### THE PEDLAR PEOPLE, LIMITED

Established 1861. 75-P

Executive Office and Factories: OSHAWA, Ont.

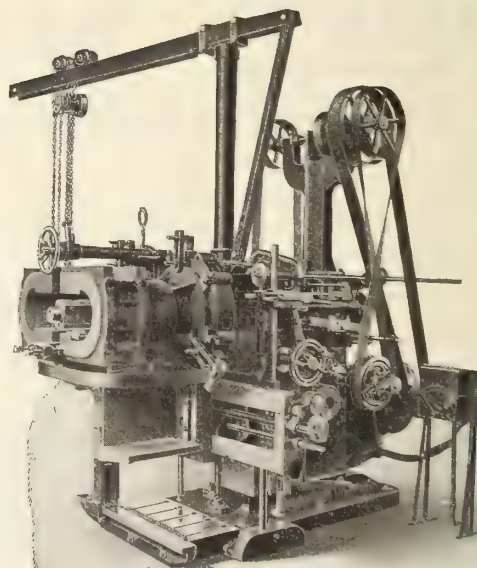
Branches:—Montreal, Ottawa, Toronto, London, Winnipeg



**SPECIAL DRAW CUT RAILROAD SHAPER, 32-INCH STROKE.**

THE MOST POWERFUL SHAPER OF ITS SIZE BUILT—ENOUGH SO TO BREAK  $1\frac{1}{4}$  x 2-INCH TOOL STEEL.

RIGID IN CONSTRUCTION, AND THE DRAW CUT ELIMINATES VIBRATION AND CHATTER.



**SPECIAL RAILROAD SHAPER, SLOTTING CONTINUOUS AXLE BOXES 22 INCHES THROUGH DIAMETER OF CROWN BRASS  $12\frac{1}{2}$  INCHES.**

THIS MACHINE PLANES THE BRASS WITH THE LINES OF CUT PARALLEL TO THOSE IN THE BOX, MAKING A PERFECT BEARING, AND ELIMINATING TROUBLE WITH LOOSE BRASSES.

## THE MORTON MANUFACTURING CO., Muskegon Heights, Mich., U.S.A.

Send for Bulletin No. 6 G., which fully illustrates.

Visit our Exhibit at Panama-Pacific International Exposition, San Francisco, Cal. Located Section 1, Block 39, Palace of Machinery.



# The Sign of the Times



Enamelled iron signs are ideal for station name and station door signs.

They are much superior to a painted wooden sign, which has to be repainted at frequent intervals, and they last a lifetime.

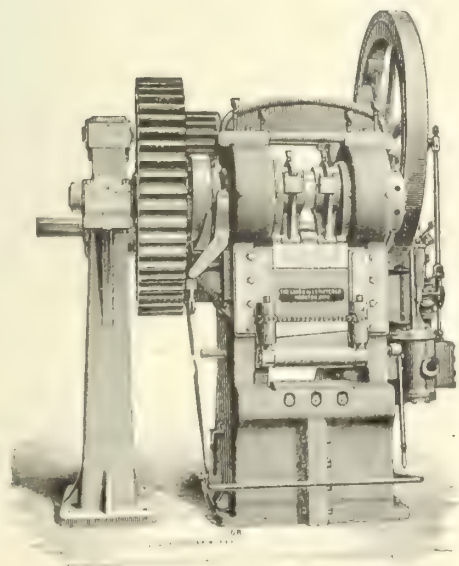
There is absolutely no wear to them, and we guarantee that they will not fade or be affected by the weather in any way.

We will be pleased to quote you prices on request.

## Acton Burrows Limited

70 Bond Street, Toronto, Ont.

## POWER PUNCHING AND SHEARING MACHINERY



Gate Shear—Steam-Driven

Over 350 sizes and styles for all kinds of light and heavy work designed and manufactured by

### THE LONG & ALLSTATTER CO.

Hamilton, Ohio, U. S. A.

Riveting Machines

Tire Welding Machines

Armature Disc Notching Machines

Tire Bending Rolls

Beam Coping Machines

Bending and Forming Machines

Write for Catalogue if interested. Correspondence invited.



# Efficient Files

When better files are possible they will still bear these famous names

**KEARNEY & FOOT  
GREAT WESTERN  
AMERICAN  
ARCADE  
GLOBE**



**MADE IN CANADA**

For 50 years we've made files only. To-day we make sixty million each year. From raw steel to finished file we supervise every step.

When any improvement is possible you'll find it first in the "Famous Five."

To cut filing cost—replace all half-worn files. At that point they lose efficiency. They require more time and more effort to remove less stock less accurately. You save money by using more files.

What you save in time, labor and money more than pays for the extra files.

**NICHOLSON FILE COMPANY**

**Port Hope**

Dealers  
Everywhere

**Ontario**

"File Filosofy"—the first and only hand-book on files. Send for your free copy now.



## Pintsch Mantle Light

No other system of car lighting gives clean, safe and efficient light without intricate mechanism, subject to defects and failures. Pintsch Mantle Light is the only absolutely dependable method of lighting railway cars.

**The Safety Car Heating and Lighting Company**

2 RECTOR STREET, NEW YORK

718 TRANSPORTATION BUILDING, MONTREAL



# 450 Railroad Shops in the United States and Canada Use Thermit



*Let us send you this pamphlet.*

This comprises practically all the shops of importance in North America, and it can be said without exaggeration that the list of railroads using Thermit includes practically every system from the small road having only three or four locomotives to the largest system in the world having many thousand locomotives.

If by any chance your shop is not using Thermit, you should investigate the process and see how effectively and economically it will handle the many repairs on locomotive frames and other sections.

Remember that the greatest railway systems in the world use hundreds of thousands of pounds of Thermit. They do not use it for any reason except that it "delivers the goods" and has proven itself a profitable investment.

Let us mail you our new pamphlet, No. 2144, which contains full information on Thermit in Railroad Shops.

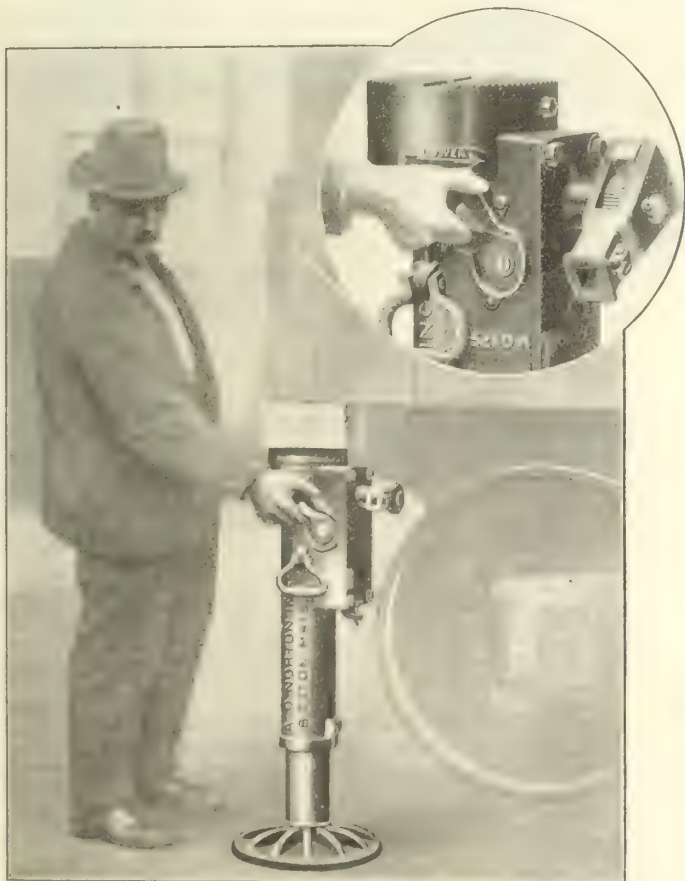
## Goldschmidt Thermit Company

103 Richmond St., W., Toronto, Ont.

329-333 Folsom St., San Francisco

7300 So. Chicago Ave., Chicago

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## Don't Pump Your Jack Down

*Lower the Load by "Pressing the Button"*

## THE NORTON SELF LOWERING JACK

is absolutely Safe and will do your work **Quicker** and **Easier** than you have ever done it before.

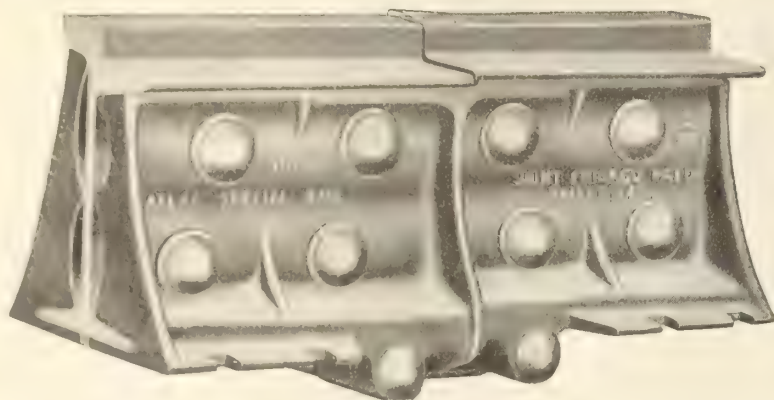
Send for Illustrated Catalogue No. 28

**A. O. NORTON, Limited**  
Coaticook, Prov. Que., Canada

Stock Carried by Canadian Agents: **MUSSENS LIMITED**  
Montreal Toronto Winnipeg Cobalt Calgary Vancouver



# Atlas Rail Joints, Braces and Tie Plates Compromise or Step Joints, Insulated Joints



Atlas Special Joint.

Atlas joints will renew the life of your rail.

Made for Tee or Girder Rail.

## Atlas Special Joint

NOTE  
CUT

for pounded rail, made to fit any style rail,

### Tee or Girder

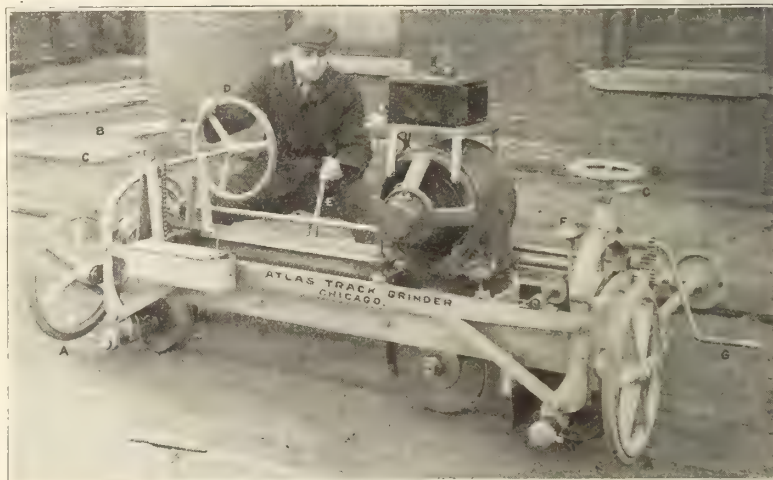
Raises the worn or cupped rail to the level of the adjoining rail and holds it there. The rail is then ground even as shown. ATLAS SPECIAL JOINT made either suspended or supported.

## ATLAS RAIL GRINDER

The best and cheapest grinder on the market to-day. Will grind two or three joints while more expensive machines grind one.

Note derailing wheels "A." By turning crank "G" the wheels are depressed, and as about 80% of the weight of the machine is above these wheels one man can easily lift the same at opposite side and roll it out of the way of a passing car.

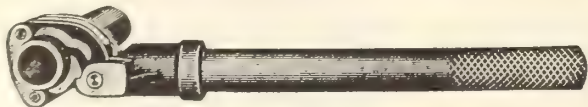
Write for further information—ask for Circular A-52.



# ATLAS RAILWAY SUPPLY COMPANY

Eastern Branch Office  
R. 316, 38 Park Row, New York, N.Y. 1527 Manhattan Building, CHICAGO

## The Parmelee Pipe Wrench "The Toothless Wonder"



### PRICE LIST C

Size	Set No.	Pipe Handled	Set Complete	Extra Handle	Extra Girths
19 in.	1	2, 2, 2, 1 in.	\$5.00	\$2.25	3, 1, 2, 1 in. \$ .75
29 in.	2	2, 1, 1 1/2, 1 1/2, 2 in.	7.50	2.50	4, 1, 1 1/2 in. 1.00
25 in.	3	1 1/2, 2, 2 1/2, 3 in.	7.50	3.00	1 1/2, 2 in. 1.25
					1 1/2, 2, 2 1/2, 3 in. 1.25

Prices on larger sizes furnished upon application.

DESIGNED ESPECIALLY to handle pipes spaced closely as in coil work. No. 2 1/2 wrench illustrated requires but three-quarter inch space between pipes.

POSITIVE GRIP instantly taken. Operates without lost motion in stroke of handle. Can be locked or released easily in any position on the pipe.

RATCHET-LIKE ACTION. Successive grips can be taken without having to hold the wrench on the pipe. By a slight twist of the handle, which is round and knurled, the wrench is locked in any position.

CAN'T CHEW. The Parmelee will make or break the tightest joints without injuring pipe or threads, as it has no teeth. The only wrench suitable for galvanized pipe.

CAN'T CRUSH. The Parmelee will grip, without crushing pipe that has become weakened by long use or exposure and separate hopelessly rusted joints, saving its cost many times over.

## Rice Lewis & Sons, Ltd.

TORONTO, CANADA.



# **A BOND**

is useful only when it connects two rails electrically. If its terminals are corroded or loose in their holes it cannot do this.

## **Electric Weld Rail Bonds**

are one piece with the rails and their terminals neither get loose nor corrode.

*Write for Catalogue and Notes.*

**The Electric Railway Improvement Co.**  
CLEVELAND, OHIO

# **Algoma Steel Corporation, Limited**

Manufacturers of

**Steel Rails, Splice Bars, Tie Plates, Forging Billets, etc.**

We would be pleased to have your enquiries for 1915 deliveries.

**Works and Sales Department: Sault Ste. Marie, Ontario, Canada**

## **DUNTLEY ELECTRIC TOOLS**

**DRILLS—All Sizes**

**GRINDERS—All Sizes**

Supplied with universal windings, suitable for D.C. and A.C. single phase current. Armatures—series wound. Efficiency—Durability—Quality. These are the strong points of Duntley tools.

*Write us for catalogues*

SOLE AGENTS FOR CANADA:

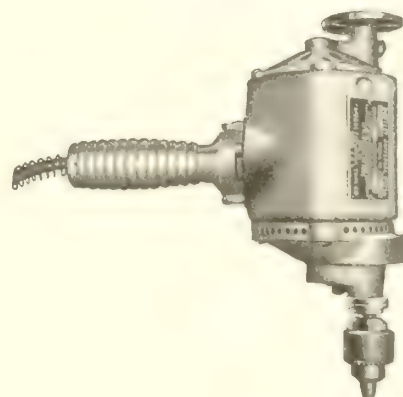
**THE HOLDEN COMPANY, LIMITED**

350-356 St. James Street, Montreal

342 Adelaide Street West, Toronto, Ont.

150 Princess Street, Winnipeg, Man.

429 Pender Street West, Vancouver, B.C.







28 "Service" Branches Throughout Canada

CANADIAN CONSOLIDATED  
RUBBER CO., LIMITED  
MONTREAL, P. Q.



# Taking One's Own Medicine

When you find a physician "taking his own medicine." you can usually rely on his diagnosis.

Of the thousand-and-one articles of rubber which we manufacture, practically all are used by us in our own offices, in our own factories, or in our own homes.

## We Take Our Own Medicine

Our line-up is complete, our quality is unexcelled, and our prices are right. Let us show you what we can do.

*It is our desire to serve you.*

CANADIAN CONSOLIDATED  
RUBBER CO., LIMITED  
MONTREAL, P. Q.

28 "Service" Branches Throughout Canada





# Canadian Railway and Marine World

July, 1915.

## The June Railway Mechanical Conventions at Atlantic City.

The two great railway mechanical conventions of the year, the American Railway Master Mechanics' Association, and the Master Car Builders' Association, were held in Atlantic City, N. J., the former on June 9 to 11, and the latter on June 14 to 16. The most important features of these annual conventions are the reports of the standing and special committees, and the individual papers presented, the principal ones of which are given on this and following pages, either in full or in abstract:—

### Report of Committee on Fuel Economy.

The American Railway Master Mechanics' committee, W. Schlafge, Mechanical Superintendent, Erie Rd., chairman, and of which W. H. Flynn, Superintendent of Motive Power, Michigan Central Rd., formerly Master Mechanic of its Canada Southern Division, was a member, submitted a report, of which the following is an abstract: Since its last report, the committee has been made a standing one, and as a result, an endeavour has been made to limit the scope of the report to a few of the leading essentials of fuel economy, that these might be completely determined.

The design of a locomotive boiler and firebox, together with appurtenances, which will permit of the largest possible amount of evaporation from a given amount of combustible burned, has the maximum efficiency, and is, therefore, the best boiler from the standpoint of fuel economy. Greater attention is now being given to the design of boilers, fireboxes, grates, ash pans and front ends, as these parts are interdependent. Comparisons of locomotives of 10 years ago with present day designs show that the ratio of total evaporative heating surface to grate area is now about 15% less, and the ratio of firebox heating surface to total evaporative heating surface, about 25% more than formerly, which is a step in the right direction. The amount of air opening in ash pans varies between large limits, from 3% to 18% of the grate area for bituminous, and from 10% to 33% for anthracite coal. The committee recommends that the air openings should never be below 12% for locomotives with 70 sq. ft. grate area, increasing for smaller grates.

The superheater means a saving of from 20% to 25% in coal and water, if properly maintained. Best operating results are obtained with full throttle opening and short cutoff. The principal causes of loss of superheater efficiency result from too high water causing priming, fire in poor condition, and the plugging of the superheater flues or superheater leaks. For best results, a temperature indicator is desirable, and a number of lines have so equipped their locomotives.

To obtain the best operating efficiency and fuel economy, in addition to the foregoing, the enginemen must be well instructed in their several duties. In consequence, the committee proposes a standard manual of instruction, which will embody all the essential points of efficient locomotive operation, and will at the same time be brief and

free from technical data. These instructions would be given in class and individually, followed by examinations.

The report contains the committee's conception of such a set of instructions. They commence with an introduction, explaining the need of co-operation, and showing the great expenditure on coal made by the railways. Bituminous and anthracite coals are then explained, followed by instructions on the inspection of the locomotive, preparation of the fire, taking coal and water, making the start, method of firing, operation of the locomotive, condition of fire reaching terminal, cleaning fires, final inspection and work reports and special instructions for the operation of superheater locomotives. The section on the method of firing is illustrated by 10 firebox diagrams, graphically illustrating the right and wrong methods. The instructions are very complete.

### Report of Committee on Draught Equipment.

The Master Car Builders' Association committee, D. F. Crawford, General Superintendent of Motive Power, Pennsylvania Lines West, chairman, submitted a report of which the following is an abstract:

Twenty questions were sent to the members, replies to which were received covering 956,879 cars. Sixty per cent. of these are of steel centre sill construction and are equipped with friction draught gear from a minimum of 100,000 lbs. to a maximum of 260,000 lbs. capacity. The capacity of these cars varies from 80,000 to 120,000 lbs. The question is involved whether the construction of a car is taken into consideration when a decision is being reached as to the capacity of the gear to be applied. It is evident that a draught gear of low capacity necessitates a better construction of car in order to take care of the shocks, which are meant to be absorbed by the gear.

The cars are about equally divided between friction and spring draught gears. About 75% experience trouble with the breaking off of the 1½ in. rivets in the drawbar yoke of high capacity gears, but only a very small number experience difficulty with keys when used in place of rivets in yokes, or depending on keys instead of yokes. The preference in types of gears would appear to be with the friction type, over 80% favoring that kind. Opinion differs widely on recommended coupler travel in high capacity gears. With the friction type, this varies from 1 to 5 ins., with the larger number favoring travels around 2¾ ins.; with the spring type, from 1½ to 2¾ ins., the majority favoring 2½ ins. travel. Opinion also differs in the size of rivets used in front and back drawbar follower stops, varying from ¾ in. with no. 6 both front and back, to 5/8 in. with no. 20, front and back. The greatest unanimity appears to be with ¾ in. no. 9, ¾ in. no. 10, and ¾ in. no. 12. Seventy per cent. experience difficulty in keeping up the nuts on drawbar carry iron bolts. A speed limit on switching locomotives and cars in dump yards is reported by only 25%.

### Report of Committee on Maintenance and Operation of Electrical Equipment.

The American Railway Master Mechanics' Association committee, C. H. Quereau, Superintendent of Electrical Equipment, New York Central Rd., chairman, submitted a report of which the following is an abstract: Fourteen steam railways have been electrified to the extent of 591.3 route miles, including 1,761.65 miles of track. Ten years operation has proved its ability to handle successfully a heavy and exacting traffic, and experience gained has demonstrated that the only question to be considered is whether it will pay. This can only be determined by a detailed study of each problem.

The report includes plans and lists of shop equipment of shops built by two railways. A study of these shows that they are equally adapted to the repairs of either steam or electric equipment, and that the tools are necessary in any event for the maintenance of steam equipment alone. On the electrification of one line the only equipment required to be added to the shop that formerly handled steam equipment alone, was as follows: 21 x 12 in. portable hydraulic press using 1,100 lbs. water, and capable of exerting 190 tons pressure; hook for lifting the front end of locomotives; lifting beam for motors; lifting beam for removing and replacing cabs; special chuck for boring bearings; tension device for re-winding armatures on a driving wheel lathe; 3 k.w. insulation testing transformer mounted on a truck with voltmeters for testing between 200 and 6,000 volts; and a cradle for holding armatures. The manner in which the electrical equipment is handled is exactly the same as with any other equipment.

A noteworthy feature is that electric shops usually have lighter equipment than steam shops, due to the individual parts to be handled being lighter. The average age of employes in such shops is less than in steam shops, owing to the newness of the business, in which men have not had time to age in the service, the average older man fearing to take up a new line of work. Workmen with extensive electrical training are not essential, as 90% of the problems to be handled are mechanical. One characteristic difference between electric and steam equipment is that with steam equipment, the defect can be located in 5 mins., while with electrical, it takes an hour or two to locate, and from 5 mins. to a day to repair. A detailed discussion of maintenance methods would be unprofitable, as there are no acknowledged standard methods of handling the work.

The usual plan on the electrification of a road is to qualify the regular steam enginemen for service on the electric locomotives, which can be accomplished in a few days under the supervision of a qualified travelling engineer. A knowledge of the book of rules, significance of train orders and signals, experience in handling air brakes and an intimate knowledge of the territory constitute 90% of the qualifications of an engineman. The operation of electric equip-



much simpler than steam equipment. It is thought advisable to consider only the mileage per detention in connection with

the records of the maintenance department, and the train delays under the subdivisions of man failure, electrical and mechanical.

## Report of Committee on Car Construction.

The Master Car Builders' Association Committee, W. F. Keisel, Jr., Assistant Mechanical Engineer, Pennsylvania Rd., chairman, submitted a report, of which the following is an abstract:

**Outside Hung Side Doors for New Cars.**—Doors may be of either wood or steel, the former to be on a steel frame. They must be provided with continuous weather and fire proofing around the top, bottom, front and back edges when closed, with the top supported against outward pressure. The closed door stop must be of metal, preferably continuous, and if not, with at least two supports. The door bottom to be supported against outward pressure at least at two points. Bolt fastened door hangers to be so arranged that door cannot be removed without taking down track, the bolts to be at least  $\frac{3}{8}$  in., 4 per hanger. Door track to be either above or below the door opening. On wooden doors, the hasp fastener must be at least 24 ins. long, fastened with at least five  $\frac{3}{8}$  in. bolts, nuts on the inside. The hasp must be rivetted on steel doors.  $\frac{3}{4}$  in. bulging of door must not interfere with operation. These recommendations apply particularly to 6 ft. door openings and single outside hung side doors.

**Draught Gear.**—A large number of failures can be traced directly to weak centre sill construction and incorrect analysis of draught gear effect on centre sill construction, which has led to an elaboration in the report on draught gear problems. Rules have been formulated based on fundamental principles and comparable with the strength of other parts of the car. Many roads are modifying wooden cars, and the design shown herewith is submitted for the purpose of illustrating the use of the rules and formulae. The draught attachments must be of metal, either integral or rivetted, with a strength value of the draught attachments and centre sill equivalent to 10 sq. ins. of steel in tension and compression,  $6\frac{1}{4}$  sq. ins. rivet bearing area, and  $12\frac{1}{2}$  sq. ins. in shear, with a ratio of unit stress to end load not exceeding 0.15. The metal draught arms to extend at least 30 ins. beyond bolster, and securely fastened to bolster and centre sills, and where possible butted against compression members placed between the draught arms and needle beams and also between the needle beams. Hardwood or yellow pine centre sills may be considered equivalent to steel in centre sill construction between bolsters, if they have 4 times the specified unit values, but if reinforced with metal, either the wood or steel alone must meet the strength requirements.

The intensity of end force is assumed at 250,000 lbs. static, considered as concentrated on the draught gear centre line, or distributed between the draught gear and end sill, with the point of contact between the horn of the coupler and the striking plate 2 ins. above the top of the coupler shank. A 5 in. deep shank is  $4\frac{1}{2}$  ins. from centre line to point of contact of coupler horn. The end force on the striking plate is  $250,000 - R$ , where  $R$  is the draught gear resistance when the horn touches the striking plate. Hence, with a 5 in. deep coupler shank, with the horn touching the striking plate the draught gear is solid, the end force of 250,000 lbs. is effective on a line a distance  $Y$  above the

$$\text{centre line, } Y = 4.5 \left( 1 - \frac{R}{250,000} \right)$$

In the design shown, the area of the centre sill is 21.28 sq. ins. Since under end shock the critical strain is compression, no reduction for rivet holes is necessary. The total moments of the sections about the top line of the cover plate is 98.44 in.-lbs., which, divided by the area 21.28, places the neutral axis of the section 4.626 ins. below the top line of the cover plate. The total moment of inertia works out to 296.4. As the neutral axis is equidistant from top and bottom fibres, the section modulus in both cases is the same,  $SM = 296.4 \div 4.625 = 64$ . Then  $\frac{1}{2} X = \frac{1}{2} X$  from which  $X = 6.6$  ins., A SM 21.28 64 the maximum permissible eccentricity of end force.

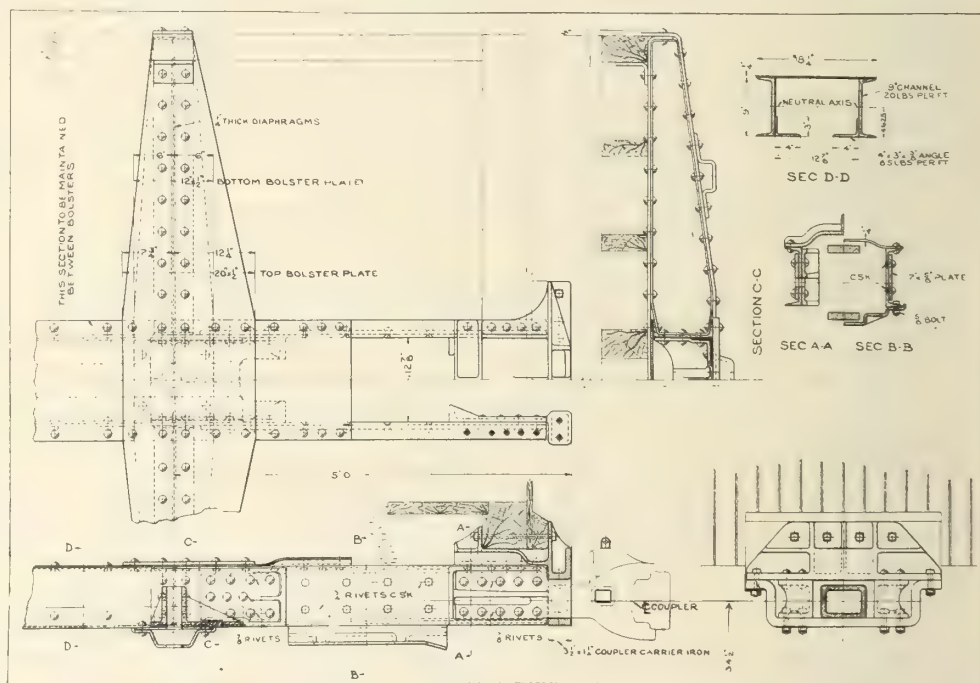
The permissible location of draught gear centre line depends on its resistance when

The highest line on which the total end force may be concentrated is  $2\frac{3}{4}$  ins. above the neutral axis, or 4 ins. above the centre line of the draught gear, therefore the draught gear resistance when the horn of the coupler touches the striking plate must

$$\text{not be less than } 250,000 \left( 1 - \frac{4}{4.5} \right) = 27,800$$

lbs. Further analysis shows the minimum tension area is 17.2 sq. ins.; minimum compression area, 20.5 sq. ins.; minimum bearing area, 20.0 sq. ins.; and minimum shearing area, 13.8 sq. ins.; which meet requirements.

**Standard M. C. B. Box Car.**—A tentative design of car is submitted in the report, that has a strength slightly in excess of the minimum requirements, a weight and cost the least possible per unit of strength, and one that will permit the substitution of stronger or patented parts. The steel sheathed type was selected as it avoids losses of lading on account of the shrinkage of single courses of wood, and because the smooth exterior reduces wind resistance, and because it permits the elimination of



Standard Reinforcing for Draught Gear of Existing Wooden Cars.

the coupler horn touches the striking plate. If this resistance,  $R$ , is 20,000 lbs., then

$$Y = 4.5 \left( 1 - \frac{20,000}{250,000} \right) = 4.14. \text{ Hence, under}$$

these conditions, the centre line must not be more than  $6.6 + 4.14 = 10.74$  ins. below the neutral axis, or not more than  $6\frac{1}{2}$  ins. below the bottom line of channels. If  $R$  is 125,000 lbs., then  $Y$  is 2.25, giving a distance below the neutral axis of 8.85 ins. The design calls for the location of the draught gear  $3\frac{3}{4}$  ins. above the bottom line of channels. The centre sill area is more than 16 sq. ins., so that it will meet requirements for steel underframes in existing cars, if the draught gear conditions are such that the ratio of unit stress to end force does not exceed 0.09. With the same procedure as before with this value,  $X$  is 2.75 ins., indicating that the resultant end force of 250,000 lbs. may take effect only within a range of  $2\frac{3}{4}$  ins. above or below the neutral axis. As the actual location of the draught gear shown is  $1\frac{1}{4}$  ins. below the neutral axis, it would be permissible to concentrate all the end force directly on the draught gear.

diagonal bracing.

All parts of the underframe thought to be unnecessary have been eliminated, and as the side and end angles are a part of the side and end frames, the underframe consists of the centre sill construction, two bolsters and two crossbearers, the latter transferring the load from the centre sills to the side frame. The bolster cover plate is to be not less than  $\frac{3}{8}$  in. for 30 ton cars; 7-16 in. for 40 ton cars; and  $\frac{1}{2}$  in. for 50 ton cars. The centre sill end construction will have an area of 25.46 sq. ins., a neutral axis of section 4.938 ins. below the top of the cover plate, a moment of inertia of 462.4, and a section modulus at the top of 93.6, and at the bottom, of 86.03, giving a ratio of stress to end load less than 0.06. This centre sill is made up of a cover plate, two channels and two angles.

The side and end framing will be made of U shaped posts, with bottom angles and top Z bars. The side sheeting will be  $\frac{1}{2}$  in. thick, and the end sheeting,  $\frac{1}{4}$  in. The section modulus of all posts on a side, excepting the corner posts which will be 15.75, will be 20.7. The bottom angles and top Z bars for



the 30 ton cars will be  $\frac{3}{8}$  in. thick; 40 ton, 7-16 in.; and 50 ton,  $\frac{1}{2}$  in.

This box car has the following general dimensions:

Length of frame over striking casting .....	42 ft. 6 in.
Length over sheathing .....	9 ft. 1 $\frac{3}{8}$ in.
Length, inside .....	40 ft. 6 $\frac{1}{8}$ in.
Width, inside .....	8 ft. 6 in.
Height, inside .....	9 ft. 0 in.
Height, from rail to bottom of bolster .....	2 ft. 6 in.

Height, from rail to floor .....	3 ft. 8 $\frac{1}{2}$ in.
Height, from rail to top of running board .....	13 ft. 4 $\frac{1}{2}$ in.
Height, from rail to top of brake staff .....	14 ft. 2 in.
Width, at eaves .....	9 ft. 2 $\frac{3}{4}$ in.
Height, at eaves .....	12 ft. 5 $\frac{1}{2}$ in.
Side door opening:—	
Width and height .....	6 ft.; 8 ft. 6 $\frac{1}{4}$ in.
Cubic volume under carlines .....	3,096 cu. ft.

Complete drawings of this tentative design accompany the report.

## Report of Committee on Design, Construction and Inspection of Locomotive Boilers.

The American Railway Master Mechanics' Association Committee, C. E. Fuller, Superintendent of Motive Power, Union Pacific Rd., chairman, submitted a report, of which the following is an abstract:

Owing to the lack of time, the committee confined itself to the question of a uniform method of determining stresses:

### Longitudinal Barrel Seams and Patches.—

In figuring net section of the plate, use the actual rivet hole diameter; in figuring rivet shear, use the actual diameter of the driven rivet; and in figuring the stress in the plate and the shear in the rivet when the barrel is not cylindrical where it joins the firebox wrapper sheet, use the maximum diameter. When the shells are cut to apply domes or manholes, the amount of metal in the flange and liner shall be equal in strength to the metal removed. When a separate flange is used at the base of the dome, its entire net area shall be assumed as reinforcement. Where the dome sheet is flanged directly to the shell of the boilers, a vertical distance of 2 ins. from the base of the flange shall be assumed as reinforcement, using the net area after the rivet holes are deducted and using 28,500 lbs. tensile strength per sq. in. as the ultimate strength if the dome sheet is welded vertically. Investigation of the strength of seams shall be along the lines of established engineering practice.

### Longitudinal Gusset Braces and Flat Surfaces.—

In figuring the stress in diagonal braces, allow for the angularity of the braces. The sectional area of the brace and the strength of the attachment of the brace to the shell both be investigated and the lowest net strength used. In determining the strength of gusset braces for supporting the back head and tube sheets, use 100% of the rivet bearing area, measured at right angles to the longest edge of the gusset sheet, and of the three, select the minimum value. The calculation of stress in gusset braces shall cover both the section of the plate and the strength of the fasteners, and the lowest net strength shall be used. In figuring flat stayed surfaces such as back heads, the boundary of the unsupported flat surface shall be located a distance equal to outside radius of the flange measured from inside of shell. No supporting value shall be assigned to the stiffness of flat plates on flat surfaces, as it is too small to be of material value. Reinforcing plates such as back head liner shall not be figured as having any staying or supporting value, but shall merely be considered as mechanical reinforcements for various attachments, such as longitudinal stays, staybolts, etc. The distance beyond the outer row of flues on the tube sheets, assumed to be self-supporting, shall be 2 ins. In calculating the area to be stayed on front tube sheet, the area of the dry pipe hole shall be deducted. T irons or other members, when used subject to bending, shall be calculated without addition for strength of plate, and the stress in such beam and its abutments must not exceed 12,500 lbs. per sq. in. The spacing of

the rivets over the supported surface shall be in conformity with that specified for staybolts. No allowance for value of such beams shall be made in calculating the total area of longitudinal braces that may be attached thereto. Where there are a number of diagonal stays supporting a flat surface, such as back head or front tube sheet, the proportion of area allotted to each brace shall be as follows: Divide the entire net area to be stayed by the entire net area of braces. If it is felt that any individual brace is so segregated as to receive more than its fair proportion of the load, it shall be investigated separately as to the area which it supports. Patches when applied to the barrel of a boiler shall be designed with longitudinal and circumferential seams at least equal in strength to the main longitudinal and circumferential barrel seams. Patches may be applied to flat stayed surfaces with properly designed single rivetted seams without impairing the strength of the sheet.

**Staybolts, Radial Stays and Crown Bar Bolts.**—In figuring the net area of staybolts to obtain the stress, the area of the tell-tale hole shall be deducted. When figuring area at root of thread, the area must depend upon the type of thread used, namely, U.S., V., or Whitworth. In determining the area for figuring stress on staybolts, the area of one staybolt shall be deducted from the rectangular area included between any four staybolts. In boilers with crown bars supported on fire box side sheets and sling stays, the sling stays shall be considered as carrying the entire load.

## Report of Committee on Brake Shoe and Brake Beam Equipment.

The Master Car Builders' Association Committee, C. H. Benjamin, Purdue University, chairman, submitted a report, of which the following is an abstract:

**Brake Shoes** have been tested at various speeds from 20 to 80 m.p.h., under pressures of application of from 1,080 to 2,000 lbs., from which certain conclusions have been deduced. The coefficient of friction diminishes as the pressure is increased, but for pressure between 12,000 and 18,000 lbs., the difference is slight. Pressures in excess of 18,000 lbs. are not economical. The coefficient of friction at high speeds is much less than at moderate speeds, the average at 80 m.p.h. being less than 10%, or less than half the corresponding average at 40 m.p.h. The coefficient of friction of filled or composition shoes is in all cases considerably greater than the average for cast iron shoes whether soft or chilled. General conclusions cannot be drawn as to the effect of speed on loss of weight, except that pressures in excess of 18,000 lbs. cause an abnormal loss. As pressure and speed increase, the wear of the shoe compared with the work done in stopping the wheel increases.

**Brake Beams**—For testing, apply an initial load corresponding to the beam in the

second column of the table below, and then reduce to zero. Apply a 500 lb. load and reset the deflection instrument to zero. Apply the test load shown, and measure the deflection, which is desired to be 0.0625 in., and not exceeding 0.07 in. Then apply the set load, when the permanent set should not exceed 0.001 in. The beam should stand a total motion of the machine head of not less than 2 ins. without failure.

No. of Beam.	Def'n Load.	Set Load.	Ratio.
1 .....	6 500 .....	14 000 .....	47.0
2 .....	12 000 .....	24 000 .....	50.0
3 .....	18 000 .....	30 000 .....	60.0
4 .....	24 000 .....	36 000 .....	66.7
5 .....	30 000 .....	42 000 .....	71.2
6 .....	36 000 .....	48 000 .....	75.0

The test load corresponds with the working load, and with the exception of no. 1, varies at 6,000 lbs. intervals. The last column shows the ratio between the two loads.

## Report of Standing Committee on Train Brake and Signal Equipment.

The Master Car Builders' Association committee, R. B. Kendig, General Mechanical Engineer, New York Central Rd., chairman, submitted a report of which the following is an abstract:

**Sliding Brake Pipe Hanger.**—It has been found almost impossible to produce a gauge for use in determining the end locations of the brake and signal pipes to fix them in their proper relation to all other parts of the car so as to permit of the required lateral and vertical movements, with sliding or swinging hangers, without interference. The 1913 and 1914 reports contain ideas that will enable any road to design satisfactory devices.

**Clasp Truck Brake for Passenger Equipment Cars.**—There are about 2,500 sets of clasp brakes on about a dozen lines. It appears to be maintaining its claims for reduced brake shoe wear per given number of ft. lbs. of brake work done, for reduced number of hot journals in so far as the brake may be responsible for them, for smoother riding of the car during the time of brake action and for remarkably low cost of maintenance, both with respect to the parts of the rigging itself and to the cost of brake shoe renewal, while the stopping efficiency is about 20% greater than the single shoe arrangement. Clasp brakes should be used where the wheel load is approximately 12,000 lbs., and should be used on all 4 wheel truck passenger cars weighing 96,000 lbs. or over, and on all 6 wheel truck cars weighing 136,000 lbs. or over.

### Hand Brakes for Heavy Passenger Cars.—

No design of hand brake gear examined seems to be entirely satisfactory. What is needed is a hand brake rigging for heavy cars that will quickly take up all the brake chain slack, bringing the shoes in contact with the wheel, after which some means is required for easily increasing the leverage so as to make possible the required brake pressure by the average man, this increased leverage to come into play when the shoe movement is practically little or nothing. There is much to recommend the application of the hand brake to a single truck, since it reduces the total leverage.

**Mathew Kelly**, Resident Engineer, Toronto Terminals, district 4, C.P.R., Toronto, writes: "As a subscriber to Canadian Railway and Marine World for several years I wish to say that I find it very interesting."

The Canadian Pacific Ry. has in its board room in Montreal a map of Canada, size 100 x 10 ft., which took 3 draughtsmen 18 months to make.



## Report of Committee on Counterbalancing.

The American Railway Master Mechanics' Committee, S. G. Thompson, Superintendent of Motive Power, Philadelphia and Reading Ry., chairman, submitted a report of which the following is an abstract:

The report only considers the counterbalancing of two cylinder locomotives, as the three and four cylinder ones are less of a problem, their reciprocating parts largely balancing themselves. The principles are illustrated diagrammatically in the accompanying illustrations, representing conditions at high speed. The radius of the circle in each case represents the centrifugal force of the counterbalance, that is the centrifugal force of the weight added to partly counterbalance the reciprocating parts. The revolving parts may be assumed as perfectly balanced, so that the weight added for that purpose need not be considered, and is not represented in the figures.

Fig. 1 represents, by shaded and unshaded portions, the total weight of reciprocating parts, the shaded portion within the circle being balanced by the overbalance when the wheel is in the position shown. The portion without the circle is the unbalanced weight of reciprocating parts, which tends to cause

The main driving wheel should have added approximately half the total weight of the main rod, plus two thirds the weight of the eccentric arm, considered acting at crank pin distance, for outside valve gear.

The overbalance should be distributed as nearly equally as possible among all driving wheels, adding to it the weight of the revolving parts for each wheel. This sum for each wheel, if placed at a distance from the driving wheel centre equal to the length of the crank, or a proportionally less weight if at a greater distance, will be the counterbalance required.

Centrifugal and reciprocating forces are usually figured at a speed in miles per hour equal to the diameter of the driving wheel in inches, which may be considered a maximum for good practice. This is ordinarily referred to as diameter-speed. At this speed the reciprocating parts, due to the laws of inertia, tend to continue their motion at the end of each stroke with a force about equal to 40 times their weight. This dynamic augment varies with the stroke, ranging from  $29.1 \times W$  at diameter speed with an 18 in. stroke, to  $54.9 \times W$  at diameter speed with a 34 in. stroke. The overbalance exerts a

weight of the reciprocating parts on each side of the locomotive below 1-160 of the total weight of the locomotive in working order, and then balance half the weight of the reciprocating parts. This general rule is based on diameter-speed, and should keep the dynamic augment well within the limits of good practice. Where the normal speed is regularly considerably below the diameter-speed, it may be desirable to increase the proportion of the reciprocating weights to be balanced, to as much as 60 or 65%.

Another counterbalancing rule is, to set an arbitrary percentage by which the dynamic force of the overbalance will be allowed to increase the static weight; for example: It is desired that the dynamic force of the overbalance at a diameter speed, should not increase the static weight on a wheel more than 50%. Then a 4-4-2 locomotive with 26-in. stroke and a static weight on one wheel of 30,000 lbs., the maximum permissible weight of reciprocating parts to be balanced in one wheel,

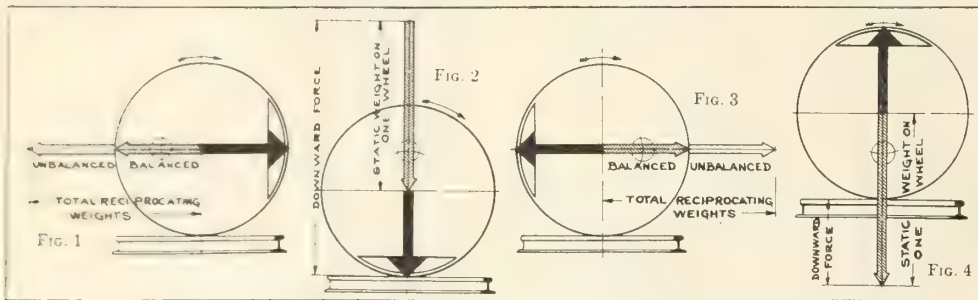
$$50\% \text{ static weight on one wheel} \times 0.312 \\ W = \frac{\text{crank radius in ins.}}{\text{diameter speed}} \times 15,000 \times 0.312$$

total reciprocating weight to be balanced on one side of this locomotive would be 720 lbs., and with 50% of the total reciprocating parts balanced on one side, the total weight of these parts must be designed to weigh 1,440 lbs.

The converse of this, given a weight of reciprocating parts balanced in one wheel,  $W$ , as 360 lbs., the dynamic augment,  $A = W \times 3.2 \times \text{crank radius in ins.} = 360 \times 3.2 \times 13 = 15,000$  lbs. Therefore, 15,000 lbs. dynamic weight is added to the 30,000 lbs. static weight, giving a total of 45,000 lbs. on the rail.

The dynamic augment may be expressed in percentage of the static weight on one driving wheel. 50% increase in the static weight on the driver at diameter-speed would represent good average practice, while much less than this percentage is greatly to be desired. The secret of proper counterbalancing for any class of locomotive in any service is to reduce the weight of the reciprocating parts as far as possible, lighter than the average practice, and more in line with those built in 1914, with specially light reciprocating parts.

Great benefit will be obtained if the railways will determine the maximum load that they can carry on the rails, bridges, etc., and then reduce the weight of the reciprocating parts to a point where the dynamic augment of the parts balanced will be only a small proportion of this maximum allowed load. Special designs of piston heads, cross-heads, hollow piston rods, and the use of high grade materials, including heat treated carbon and alloy steel, aluminum, etc., make it possible to construct very light parts, the expense of which will be many times justified by the consequent saving in repairs to equipment and track, as well as the saving due to the increase in tractive power of the locomotives. With a refinement of design along these lines, it is altogether possible to construct reciprocating parts approaching in lightness 1-240 of the total weight of the locomotive in working order, instead of 1-160 as expressed in the previously mentioned general rule representing a fair average. With an increased tendency toward these very light parts, the percentage of parts balanced or unbalanced becomes less and less a factor. Greater efficiency is thus given to the locomotive, in that more and more of the weight allowable on the rail will be used in starting and pulling the train.



Figs. 1 to 4 Diagrammatic Representation of the Principles of Counterbalancing.

causing or fore and aft irregular movement of the locomotive.

Fig. 2 shows the position of the wheel after a quarter turn, in which the effect of the unbalanced reciprocating parts is eliminated, and the distorting forces are caused by the centrifugal force of the overbalance acting in a downward direction, the resultant effect on the track being the static weight on the driving wheel plus the centrifugal force of the overbalance. This position gives the greatest pressure on the rail.

Fig. 3 is similar to fig. 1, and shows the effect of unbalanced reciprocating parts in the opposite direction, after another quarter turn. Slight differences in figs. 1 and 3, due to angularity of connecting rods, etc., need not be considered.

Fig. 4 shows the downward force on the track when crank pin is down and overbalance is up, this force being the difference between the static weight on driver and centrifugal force of the overbalance. This position gives the least pressure on the rail. The proportions show the overbalance to neutralize about half the static weight on the wheel, leaving half the static weight as the downward force on the track for this position of the crank.

The reciprocating parts to be considered in counterbalancing are: piston head, rod and nut; cross-head, cross-head key, pin and nuts; approximately half the total weight of the main rod; arm and link fastened to cross-head for outside valve gear. Each driving wheel should have sufficient weight added to counterbalance exactly the weight of its revolving parts, which are: crank pin, crank-pin hub, and the proportion of the weight of the side rods attached to the pin.

centrifugal force equal to about 40 times its weight, and is at a maximum at the top and bottom position of the crank. This force is added to the static weight, in the lower position of the overbalance, and is opposed to this weight, in the upper position, as shown in figs. 2 and 4. Approximately one fortieth of the static weight on a wheel will therefore give the weight of the reciprocating parts which could be balanced without causing the wheel to rise from the track at diameter-speed. This amount of balance would also double the load on the rail when the balance is down.

The method most generally used for many years in counterbalancing locomotives has been to balance a portion of the total weight of the reciprocating parts, usually about two-thirds. A second method, and the one recommended in the 1896-97 reports to the A.R.M. M., is to leave unbalanced, on each side of the locomotive, a portion of the reciprocating parts equal to 1-400 of the weight of the locomotive. Tests made on several locomotives disproved the value of both of these methods, and emphasized another relationship which seems paramount to proper counterbalancing: The ratio of the total weight of the reciprocating parts on each side of the locomotive to the total weight of the locomotive in working order. These tests also showed that the lighter the reciprocating parts can be made, better results will be obtained, and also that when counterbalancing for very high speed, a larger portion of the reciprocating weights can be left unbalanced than has been the practice.

A simple counterbalancing rule for good average results on any class of locomotives in any service, is as follows: Keep the total



### Report of Committee on Car Wheels.

The Master Car Builders' Association Committee, W. C. A. Henry, Superintendent of Motive Power, Pennsylvania Lines, chairman, and of which R. W. Burnett, ex-General Master Car Builder, C.P.R., is a member, submitted a report of which the following is an abstract:

The report is a progress one, as it was impossible to complete in time the various investigations on car wheel designs that are under way. A circular of enquiry elicited replies from roads covering 1,297,909 cars. Of wheels reported cracked or broken, 904 were 625 lb. wheels, 651 were 675 lb. and 647 were 725 lb. Of the 625 lb. wheels, 63.6% were under refrigerator cars, and as on all cars of 60,000 lbs. and less, only 11.6% are refrigerator, the percentage of failures is disproportionate. A large number of 625 lb. wheels failed under refrigerator cars of a gross weight of 105,000 lbs. or over, which is a greater weight than is supposed to be carried by those wheels.

Breaking and cracking of plates of cast iron wheels occurs to a large extent on roads having long and heavy grades, and the heating due to the continued application of the brakes is undoubtedly the reason for these failures. M.C.B. practice is to brake cars to 60% of their light weight with 50 lbs. pressure. The result of this is that a 60,000 lb. refrigerator car weighing 44,000 lbs. with 625 lb. wheels will have a braking power in many instances equal to or greater than a 100,000 lbs. car weighing 40,000 lbs. with 725 lb. wheels. It is again recommended that wheels of the proper size be used, as at present many cars are running with lighter wheels than are proper.

A suggested change of tread taper from 1 in 20 to 1 in 38 is not approved, as it is thought that any change would be detrimental to the wheel.

### Report of Committee on Locomotive Headlights.

The American Railway Master Mechanics' Association committee, D. F. Crawford, General Superintendent of Motive Power, Pennsylvania Lines, chairman, and of which W. H. Flynn, Superintendent of Motive Power, Michigan Central Rd., and formerly Master Mechanic of its Canada Southern division, is a member, submitted a report of which the following is an abstract:

Incandescent lamp headlight standards should be adopted. The voltage should be 6 volts, as this will permit the use of standard 6-volt automobile lamps in the cab, markers, etc., having the strongest possible filament of the most rugged construction. A complete line of 6 and 7 volt lamps has been manufactured for some years past for automobile service. This voltage will permit the use of a small storage battery on the locomotive, if so desired, and can be obtained from a small turbo-generator as readily as any other voltage.

An incandescent lamp of approximately 50 mean horizontal candle-power will give sufficient light to meet the recommended maximum requirement of 3,000 apparent beam candle-power. Concentrated filament tungsten lamps are now regularly manufactured in candle powers of 50, 100 and 160 at 6 and 7 volts, for headlight service. The two larger sizes are not deemed necessary by the committee. The lamps recommended for use in the headlight are 50 c.p., 7 volt, G-20 clear bulb, Edison screw base (style 100), loop-back tungsten filament, multiple burning, headlight lamp, and for use in the

cab, markers, etc., 6 c.p., 7 volt, G-10 clear bulb, double-contact bayonet candelabra base (style 1000), tungsten filament, multiple burning lamps. Standard bayonet double-contact sockets are recommended for bayonet base lamps. Standard Edison screw sockets, equipped with Benjamin lamp grip, or equivalent, are recommended for use with the headlight lamp. When metal reflectors are used, the minimum nominal diameter should not be less than 16 ins. When parabolic glass reflectors or semaphore type lenses are used, the minimum nominal diameter should not be less than 12 ins.

The report also outlines the recommended method of photometering and contains recent federal and state headlight legislation in the United States.

### Report of Committee on Loading Rules.

The Master Car Builders' Association committee, A. Kearney, Assistant Superintendent of Motive Power, Norfolk and Western Ry., chairman, submitted a report of which the following is an abstract.

The suggestions in the main have reference to new rules covering shipments of materials and machinery which have not been completely covered by former rules. In addition there are a number of corrections and minor alterations. The question of loading heavy stone shipments was considered, especially what is termed mill-block, containing 100 cu. ft. and upwards. Tests made with such blocks showed that at 4 m.p.h. with the standard end stakes, the blocks moved slightly. Tests in train service demonstrated the same thing. This subject is covered by a suggested addition to the present ruling on stone loading. Illustrations show the approved method of loading mining cars in gondola cars, loading gasoline tractor engines on flat cars and loading brick 15 ins. or less in length without door protection.

In the matter of loading rules regarding the overhead inspection of box cars, few additional roads have done very much toward even trying the proposed certificate of inspection card, although it was recommended by the American Railway Association. Those that are experimenting have found difficulty, it is reported, and quite naturally, on account of so few roads having taken up the proposed inspection. It may be unfortunate it has not received wider attention, if for nothing else than to ascertain its value or determine what, if any, alterations and modifications might be effected to make it more suitable, and possibly better accomplish the desired end, or possibly permit the working out of some entirely different direction for higher general efficiency.

With reference to loading rules regarding interline loading, after consultation with the American Railway Association, it has been concluded that doubtless the energies of the M. C. B. committee might be best utilized by assisting the committee of the American Railway Association. It was considered such a course would be most profitable, besides being helpful toward a better understanding of the M. C. B. loading rules requirements, which have for their principle mainly the safe carriage of shipments. It should also tend to harmonize related rules reached by the classification committee in the formulation of their schedules.

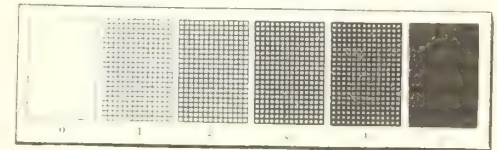
### Report of Committee on Smoke Prevention.

The American Railway Master Mechanics' Association committee, E. W. Pratt, Assist-

ant Superintendent of Motive Power, Chicago and North Western Ry., chairman, submitted a report of which the following is an abstract:

No new tests were made during the year with smoke preventing apparatus on locomotives, but as inquiries had been received by the committee on the smoke improvements in Chicago, the report deals with developments in that city. Another year's use of the steam jets, quick action blowers, etc., recommended in the 1913 report, confirms the belief that locomotives so equipped and properly handled are practically free from smoke. These devices are accepted as standard by the city.

City smoke inspection costs about \$39,000 a year, and railway inspection about \$65,000 a year. The railway inspectors have formed a joint smoke inspection bureau, which has issued instruction cards to all its inspectors.



The Ringelmann Smoke Chart.

These inspectors not only inspect their own lines, but also other lines. The city inspectors have their work divided into districts. They inspect the smoke for a total of 2 hours daily, either in one period, or in 15 min. periods, the Ringelmann chart shown herewith being used. An engine-minute covers the observation of one locomotive during one entire minute. During this minute, 14 secs. or less are not counted; 15 to 45 secs. count as  $\frac{1}{2}$  min.; and 45 to 75 secs. as 1 engine-minute. One minute of no. 1 density is a smoke unit, so that  $\frac{1}{2}$  min. of no. 1 is 0.5. The percentage of smoke density is obtained by multiplying the smoke units by 20, and dividing the product by the total engine minutes. The tabulation for Feb. 1915, shows the G. T. R. with the lowest percentage density, 1.91%. The total city density has decreased from 22.3% in 1910 to 7.41% in 1914.

### Report of Committee on Settlement Prices for Reinforced Wooden Cars.

The Master Car Builders' Association committee, J. McMullen, Mechanical Superintendent, Erie Rd., chairman, and of which H. G. Griffin, General Car Inspector, C.P.R., is a member, submitted a report of which the following is an abstract:

To get the proper perspective of the matter of settlement prices, it is necessary to keep steadily in view the essential fact that the basic, arbitrary prices now provided in the rules for wooden cars are quite liberal; hence, before it may be adjudged fairly that any particular part of a car or an appliance, even though obviously an improvement over wooden construction, merits a special price as a betterment, it should be determined whether the basal price does not cover, reasonably, any difference in value that such part or appliance bears over the type of construction upon which the basic prices were determined. Changes are recommended in rule 116 covering the prices for car bodies.

On the question of depreciation to be figured on rebuilt cars, the committee was unable to come to any conclusion, or arrive at any working basis upon which all could agree.



## Report of Committee on Locomotive Stokers.

The American Railway Master Mechanics' Association Committee, A. Kearney, Assistant Superintendent of Motive Power, Chicago and North Western Ry., Chairman, submitted a report of which the following is an abstract:

Another year's experience with the locomotive stoker strengthens the conviction that it is not only accomplishing its purpose, but withstands the test of continuous service with remarkable durability. While it may be said that nothing novel has been presented during the past year, a great deal of very good work has been done along already established lines. The effort has been chiefly in the refinement of detail parts; redesigning and improving them to better withstand the service. In some cases manufacturers have added new parts; in others, parts more durable have been substituted; again, parts have been entirely eliminated. There is no thought that the stoker is unlike other mechanical devices on the ground that it is not susceptible to failure; and when it gives way it will usually do so under service strains. The theory that the parts of the stoker be amply strong and in excess of the strength of the engine has its advantages. Attention is being given the matter of accessibility of parts. The stoker manufacturers have advanced considerably in their attempt to apply machines to existing locomotives, and it is safe to say their work has been somewhat hampered. Stokers will occasionally become inoperative by clogging, due to wet coal, and lump coal. Most of the clogging is caused by junk and foreign matter.

Time and experience have brought progress in the way of improving the manipulation of the scatter-type stoker, both in the care of the machine, as well as in a more efficient use of fuel. Instructions and experience have effected marked improvement, and now it is rather rare to find a fireman disturbing the grates so long as a sufficient steam pressure is maintained to handle the train efficiently and successfully. The stoker is started, stopped and otherwise controlled with better regulation of fire and less loss of steam through the relief valve. Experience shows that the grates should not be disturbed as long as the fire is maintained in good condition, and the required air is permitted to pass through the grates to supply the proper rate of combustion.

The cost of stoker maintenance has been somewhat affected in the aggregate during the past year by the modifications, improvements and changes introduced currently. Scatter-type stokers cost per 100 miles from 43 to 68 cts., and operate from 1,000 to 5,000 miles per failure.

It has been an open question as to whether it is more economical to prepare coal at wharves or on the tenders of the locomotives. There is strength in the theory that the centralization of crushing plants may be economical under service and physical conditions. Then again it is claimed to be good practice in certain localities to crush coal at outlying wharves or at coaling tips, as against equipping locomotives with individual crushers. The aggregate cost of maintenance of a crusher at a wharf may be less than that for a number of locomotives, and it should not be forgotten that while crushers may be obtained that will fairly well handle the major portion of foreign matter found in fuel, it is conceded difficult to cope with such conditions after it reaches the locomotive. Regardless of this, however, it may be economical to equip locomotives with individual crushers on account of the proportion or volume of fuel supplied, aside

from the advantages in being able to handle a wider range in grade of fuel supplied at outlying stations and on branch lines.

In the past year 15 Hanna stokers were applied to Mallet locomotives, 72.2 sq. ft. of grate area, and 12 Standards to mastodon locomotives, 45 sq. ft. grate area, on the same road. They are handling sometimes slack and in other cases run of mine coal, from which the product under 2½ in. has been screened; they have been put in general fast and slow freight service. Following is a statement of the stokers in active service: Underfeed type: Crawford; Overfeed or scatter type: Street, Hanna, Standard and Kincaid; Chain grate type: Ayers.

**Crawford Stoker.**—There are 282 Crawford double underfeed stokers on the Pennsylvania Lines West of Pittsburg. It is still the only underfeed type in service. 9 are being tried out experimentally on other lines, making a total of 291 in service. A new pattern is being constructed for test.

**The Street Stoker** shows the largest number in service, totaling 531, with 24 on order. The latest design has a variable speed engine and a friction clutch, instead of differential gear. In the latter designs the crusher was set aside. These stokers are in operation on 15 railways, mostly on eastern roads. They are operated in passenger, general fast and slow freight service, performing their work satisfactorily.

**The Hanna Stoker** is equipped with durable crushing facilities on the tank, consisting of a heavy helicoid conveyor screw and a bulkhead containing a restricted opening, partly encircled by two stationary knives. Coal is forced through the restricted opening in the bulkhead by the revolving conveyor screw, assisted by the two stationary knives for breaking the larger lumps, handling slack as well as run of mine coal efficiently. In the past year 18 Hanna stokers have been in continuous operation. Two distinct recourses can be utilized in emergencies; 1st, if any part of the tender conveyor becomes inoperative, the conveyor can be thrown out of operation and the coal shoveled into the locomotive hopper; 2nd, if the entire stoker becomes inoperative, coal can be shoveled to the plate by hand, from which it is driven to any section of the fire box by means of a blasting chamber and distributing plate.

**The Standard Stoker** is equipped with adequate crushing facilities on the tank, consisting of a durable helicoid conveyor screw and a bulkhead having a restricted opening partly surrounded by fixed centre punches. Coal is forced through the opening in the bulkhead by the revolving conveyor screw, assisted by the stationary centre punches for crushing the larger lumps. During the past year 20 Standard stokers have been put in operation in slow and fast freight service, and are working satisfactorily.

**The Gee Stoker** continues in service on a consolidation locomotive, and operates satisfactorily. It is still undergoing development.

**The Kincaid Stoker** continues to progress. The distributing features are attached to the fire door; coal is shoveled into a hopper elevated in front of and attached to the door, from which it gravitates to a distributing apparatus and is delivered to the fire box.

**The Elvin Stoker** has not substituted some other device or devices for the scoop. It is thought that within the near future the machine will be tested out on a locomotive.

**The Raite Stoker**, claimed to be either underfeed or a scatter type, embodies a combination of the two methods.

**The Ayers Stoker** is of the traveling grate

type, and reports progress. Last year a number of experimental trips were made, which are reported to be encouraging. It is thought that it will soon be ready for service.

During the past year, locomotive stoker patents were issued to 14 parties. The committee has been unable to learn of any further activity in the use of the following stokers: Barnum, Dickerson, Heyden, Heyden-Modified, Erie, McMullen, Harvey, Strouse. Stokers under development not yet applied are: Elvin, Raite, Dunning. Stokers for which no advice can be obtained as to their status are: Barnum, Dickerson, Erie, Heyden, Heyden-Modified, Harvey, Strouse.

The following are stokers in active service and on order respectively: Street, 531, 24; Crawford, 291, 1; Hanna, 18, 5; Standard, 22, 0; Gee, 1, 0; Ayers, 1, 0; and Kincaid, 1, 0.

The Street delivers fuel to 3 points of entrance through the back head of the boiler above the fire door; the Hanna delivers fuel to its distributing apparatus in the fire door proper; while the Standard elevates its feed by means of a vertical screw located just inside of the fire door to a point about on a level with the fire door. They are all three of the scatter type and each employs the steam jet in the distribution of its fuel.

It seems safe to say that the mechanical stoker has demonstrated by extensive service that it is capable of supplying coal to a locomotive fire box at a rate and under sufficient control to satisfactorily maintain the working steam pressure. It is also obvious, being a machine and working continuously, it should be capable of maintaining a more regular rate of steaming with certain grades of fuel than might be obtained in average hand firing practice. The average steam pressure for a division run seems to be in favor of the stoker on account of the higher average pressure maintained, especially toward the end of the run. It might be said, therefore, that greater work is done with the stoker, in terms of speed or tonnage, or both, under certain physical and operating conditions, while in another service with equally large locomotives and heavy tonnage, but under more favorable grade line and fuel conditions, as high efficiency has been obtained hand firing. It is also evident that the stoker, since it is a mechanical device, is only limited in capacity by its allowable dimensions, and its endurance should be that of machinery dependent upon design and attention.

The committee feels itself unable to point to any rule in terms of weight of locomotive or train load, or general conditions, where the stoker will always be applicable or necessary on account of the wide range of physical and operating conditions, as well as character of fuel, and the question of fuel is by no means a minor factor, for the reason that the choice of available coals demands consideration of their character as well as price, as the net result of using some of the finely divided grades of stoker prepared or mixed coal may be offset by a more attractive rate of consumption, better evaporation, and lower cost per ton mile with run of mine after it has been crushed to the desired grade.

## Report of Committee on Car Trucks.

The Master Car Builders' Association Committee, J. T. Wallis, General Superintendent of Motive Power, Pennsylvania Rd., chairman, and of which J. Coleman, Superintendent Car Department, G. T. R., and L. C. Ord, Assistant Works Manager, Car Shops, C. P. R., are members, submitted a report of which the following is an abstract:

**Specifications and Tests of Cast Steel**



**Sides**—For a proof test, take a minimum of one frame from each heat, and not less than 2% of all the frames supplied. In the 80,000, 100,000 and 140,000 lb. cars, the initial load will be respectively 20,000, 25,000 and 35,000 lbs., with proof test loads of 110,000, 125,000 and 175,000 lbs., the maximum deflection in each case not exceeding 0.15 in., and maximum set, 0.01 in. After applying the initial load, reduce the load to 5,000 lbs. and set the deflection instrument at zero; apply the requisite proof load and measure the deflection; reduce the load to 5,000 lbs., and measure the set.

**Truck Sides** shall not vary more than 3% above nor 2% below the determined normal weight of the casting. These for 100,000 and 140,000 lb. cars are respectively 505 and 665 lbs.

**Cast Steel Bolsters.** The objection raised

was based on a car loading that would raise the centre of gravity to 6 ft. above the rail, when it was determined that the distance from centre plate to side bearings must be at least 24 ins., in order to avoid overturning. The committee has arranged the design of the top plate of the bolsters so as to take the side bearing plates with spreads of 48 to 58 ins.

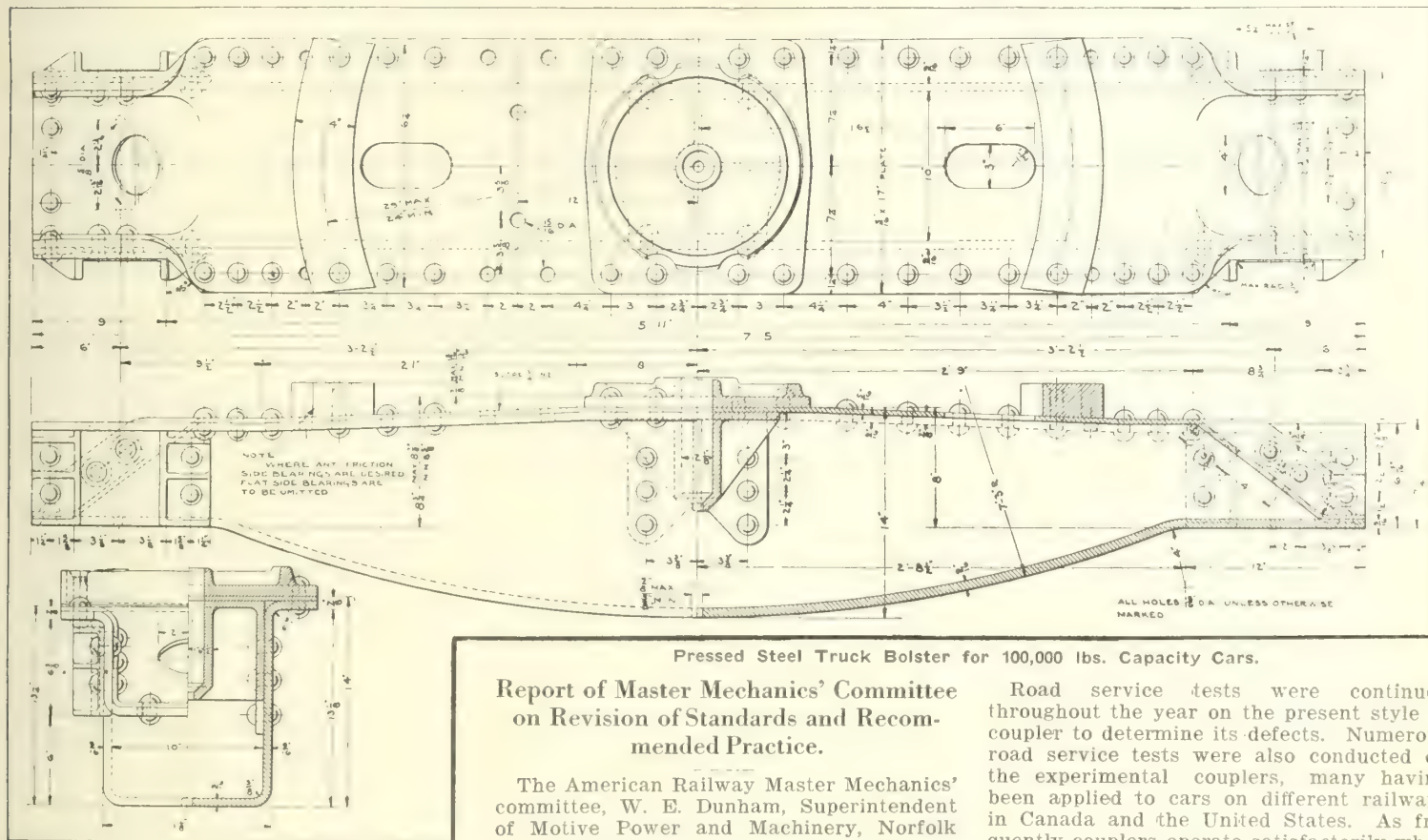
**Centre Plates and Gauges.** The design for 80,000 lbs., 100,000 lbs. and 140,000 lbs. capacity cars and gauges for same has been changed, providing for a uniform height of flange of  $1\frac{1}{4}$  ins. on the outer ring of the female centre plates, and the radial diameters changed so as to provide a total clearance of  $\frac{1}{4}$  in. instead of the present  $\frac{1}{8}$  in. There is no necessity for increasing the bearing surface of centre plates for 140,000 lb. cars.

of sufficient capacity to prevent steam entering the gauge. Safety valves must be set to pop at not more than 6 lbs. above working pressure. A copy of the monthly inspection report must be placed under glass in the locomotive cab.

Regulations are given covering the operation of brakes on locomotives and tenders handled dead in the train and offered for interchange.

### Report of Standing Committee on Couplers.

The Master Car Builders' Association Committee, R. L. Kleine, Chief Car Inspector, Pennsylvania Rd., chairman, submitted a report of which the following is an abstract:



Pressed Steel Truck Bolster for 100,000 lbs. Capacity Cars.

### Report of Master Mechanics' Committee on Revision of Standards and Recommended Practice.

The American Railway Master Mechanics' committee, W. E. Dunham, Superintendent of Motive Power and Machinery, Norfolk and Western Ry., chairman, submitted a report of which the following is an abstract:

A revision is recommended in the specifications for steel axles for locomotive tenders, a copy of the recommended form being given.

For journal, box, bearing and wedge, minor changes in the drawings are recommended to correct errors and to improve certain details.

An error in the specifications for 33 in. cast iron wheels is corrected.

A revision of the specifications for boiler and fire box steel, locomotive forgings, cylinder castings, etc., and cast steel locomotive frames, is recommended, tentative modified specifications accompanying the report.

To conform to the latest revision of the United States federal regulations for the inspection and testing of locomotive boilers and their appurtenances, a revision is recommended in the rules of inspection and testing of locomotive boilers. At dates from 1916 to 1921, the minimum factor of safety is set on a rising scale varying from 3.25 to 4. Flexible staybolts without caps must be tested monthly. Every gauge shall have a siphon

Road service tests were continued throughout the year on the present style of coupler to determine its defects. Numerous road service tests were also conducted on the experimental couplers, many having been applied to cars on different railways in Canada and the United States. As frequently couplers operate satisfactorily when new, only developing defects with age, the committee cannot offer recommendations until the couplers have seen further service, not having been in service long enough to determine all the weak points or the seriousness of the defects. This is the consensus of opinion of the 32 roads submitting preliminary reports. These new couplers are now under trial on the C. P. R., G. T. R. and Intercolonial Ry.

Tests on the new couplers in the service testing machine were conducted, daily logs being taken and the couplers carefully inspected after each 10,000 cycles. Both couplers of the no. 5 contour were separately subjected to 30,000 cycles of the machine, every cycle representing one each of the following: coupling, lock setting, uncoupling, closing knuckle and throwing knuckle open.

It is recommended that all new equipment be designed to accommodate these new couplers. As a result of the investigations the committee unanimously decided to permit the manufacturers of the new couplers to make the final changes in accordance with the programme in the 1913 report.

to the design submitted last year for 80,000 lb., 100,000 lb. and 140,000 lb. cars was that the detachable centre plate added weight, the trouble with the integral plate not being considered of sufficient importance to warrant the extra expense of a separate centre plate. Two designs of bolsters are thus submitted, with and without separate centre plates. Tests also show that there is sufficient support under the centre plate.

**Bolster Weights**—Variations from the normal weight of more than 3% above and 2% below are not permitted. The normal weights for the 80,000 lb., 100,000 lb. and 140,000 lb. cars are to be respectively 710 lbs., 775 lbs. and 1,000 lbs.

**Pressed Steel Truck Bolsters**—Four bolsters of each capacity, 80,000 lbs., 100,000 lbs. and 140,000 lbs. were tested, from which the average normal weight was determined for the three as respectively 795, 865 and 1,140 lbs. The design for the 100,000 lb. car bolster is shown in the accompanying illustration.

**Spread of Side Bearings**—The 50 in. side bearing spread recommended last year was defeated by a small majority. This spread



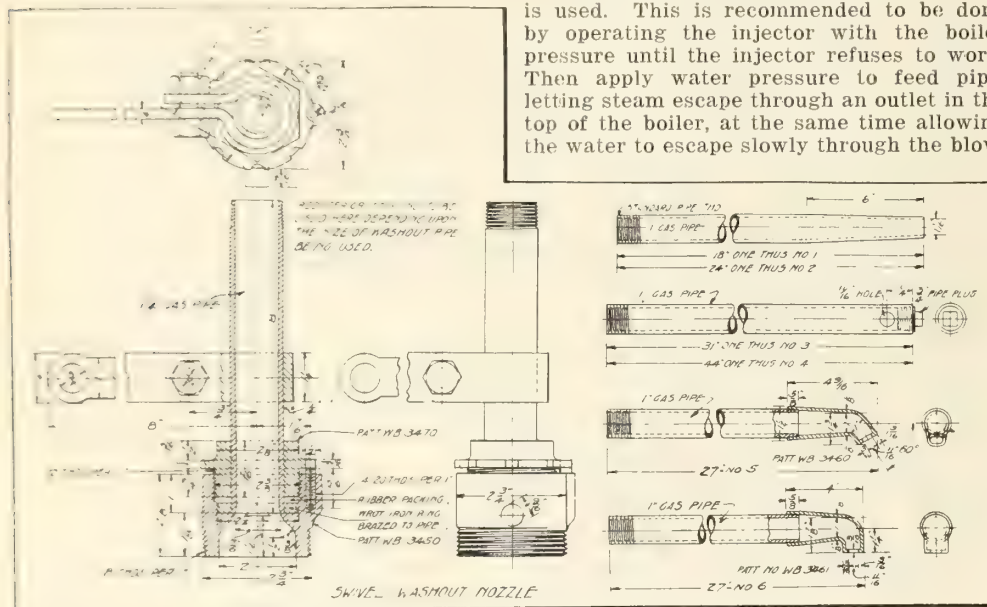
## Report of Committee on Boiler Washing.

The American Railway Master Mechanics' committee, J. Purcell, Assistant to President, Anderson, Popoka and Santa Fe Ry., chairman, submitted a report of which the following is an abstract:

Early this year 20 questions covering every phase of boiler washing, were sent to 118 heads of mechanical departments of member companies, the answers to which are embodied in the report. Replies covering 51,294 locomotives were received. Of these, 9,760 made less than 500 miles between washings; 11,283, from 500 to 1,000 miles; 8,312, from 1,000 to 1,500 miles; and 20,472, over 1,500 miles; the passenger locomotives made about 30% better mileage than the freight. Only about 5% of the roads practice changing the water, and about 15% practice a regular system of blowing out boilers at terminals. About 35% are blown out regularly and systematically on the road to remove mud or sludge and to prevent foaming, but in the majority of these, it is left entirely to the discretion of the crew as to when it should be done,

ing plants are on the western lines in the bad water country. 45 roads report using chemicals directly in the tender tanks, 19 using soda ash and 26 boiler compound, this practice being more prevalent on lines having a few bad water districts. 76 roads use boiler compounds, soda ash and other chemicals to prevent incrustation, and 29 use boiler compounds or other chemicals to prevent foaming, but treated water appears to increase the tendency to foam, frequently requiring the additional use of anti-foaming compounds. But few roads treat water to prevent corrosion, and 7 claim increased repairs to valve packings due to foaming, with other general increases in repairs. Increased mileage as high as 300% is made possible, with an average of 100%. None of the roads use mechanical water purifiers. 16 roads have special rules governing washing, but the majority follow the Interstate Commerce Commission's instructions.

As a result of the above it was felt that only general instructions on boiler washing might be offered. All boilers should be washed every 30 days or more frequently if required, thoroughly cooling off the boiler first unless an improved hot water system is used. This is recommended to be done by operating the injector with the boiler pressure until the injector refuses to work. Then apply water pressure to feed pipe, letting steam escape through an outlet in the top of the boiler, at the same time allowing the water to escape slowly through the blow-



Boiler Washing Nozzles Recommended by Committee.

results showing that when intelligently performed, mileages over 2,000 are possible without foaming trouble. The maximum number of washout plugs in a boiler is 52, and a minimum of 10, averaging for all modern power, 22.

The cost of washing boilers varies from 10 cts. to \$5.50, costing about 35% less with hot than cold water. The conclusions drawn are that it can be thoroughly done with cold water for less than \$3.50. The average pressures used were 96 lbs. at the pump, and 72 lbs. at the nozzle. Hot water washing is used on 54 roads, with 13 installations on one line, and its use is rapidly increasing. It is claimed to be very desirable for pooled locomotives, where the power must be quickly turned. The reduction in water consumption from the use of hot water averages 3,427 gals., or 36%, some roads running as high as 9,000 gals. A saving in time of 1 hr. 54 mins., or 42%, and in fuel of 897 lbs., or 36%, also results. It also entails reduction in boiler troubles, such as cracked sheets, leaky stays, etc., averaging 34%.

Water softening plants at wayside tanks are reported from 31 roads, appearing to give better results than when the chemicals are placed in the tender tanks. Most treat-

off cock until the temperature is about 90 degs., when the plugs may be removed and the boiler allowed to drain.

To wash the boiler, remove all the plugs and begin washing through the holes on the side opposite to the front end of the crown sheet, washing top of the latter at the front, working back so as to shift the mud and scale away from the back ends of the flues. The crown sheet is next washed from the boiler head, next washing the back ends of the flues through holes in the connection sheet. Then wash the water space between the back head and the firebox door sheet through holes in the back sheet. Arch tubes must be washed and scraped every time the boiler is washed. The side sheet water spaces are next washed through the holes in the side of the boiler opposite the crown sheet. Then wash the barrel through a hole in the bottom, washing towards the front if there is a mud drum; otherwise wash towards the throat sheet. Wash as great a space of the tubes from that position, finishing the balance from the front end. The mud ring is then washed through the side and corner holes in the mud ring. When cooling and filling boilers, fill through the injector check. Recommended washing nozzles are shown herewith.

## Report of Committee on Arbitration.

The Master Car Builders' Association committee, J. J. Hennessey, Master Car Builder, Chicago, Milwaukee and St. Paul Ry., chairman, and of which J. Coleman, Superintendent Car Department, G. T. R., is a member, submitted a report of which the following is an abstract: During the year, 48 cases were decided. A feeling has arisen that the rules should not be revised so often, and that their effectiveness should extend over a longer period. In view of this the committee has refrained from asking for further suggestions this year. In so far as interpretations of the rules are concerned it is recommended that they be placed on the page opposite the rules, as the latter are well understood, but might become confusing if the changes were added in the body of the article. Only the recommended changes are given in this abstract.

In rule 2, the last three paragraphs, the words "on both sides of car" to be added after "carried."

Rule 3, par. d, change "journals" in second line to "axles"; sec. d to be divided into two paragraphs, that cars built after Oct. 1, 1915, with axles other than M. C. B. standard be not accepted in interchange, and that cars built after Oct. 1, 1916, with journals other than M. C. B. standard be not accepted in interchange; advance date of effectiveness to Oct. 1, 1916.

Rule 8 changed to read: "Billing repair card shall be made in duplicate, the original to be known as the billing card and the duplicate to be known as the record repair card, and to be of the form shown on pages 107, 108, 109 and 110, all items of repairs to be in handwriting."

Rule 21, sec. a, after "roof" in last line, add "or for the cost of applying temporary hand railings to, or boarding over the opening on, empty well hole cars."

Rule 40 eliminated.

Rule 42 to have the following substituted for the eliminated second paragraph: "In the case of four or more longitudinal sills requiring renewal or splicing, if the repairs of each of such sills are due to decay or elongated bolt holes, the car shall be held and joint inspection statement forwarded to owner, who shall promptly authorize repairs at his expense, or destruction of car; in this case, any sill decayed and cracked, or decayed and broken, must be considered as a broken sill."

Rule 54 change to read: "Car owners are not responsible for damage to any part of the brake apparatus caused by unfair usage, derailment or accident that requires repairs or renewals."

Rule 60, after "tested" in second line, add: "or dirt collectors not cleaned."

Rule 68 to read: "Flat sliding; cast iron, cast steel, wrought steel or steel-tired wheels; if the spot is 2½ ins. or over in length, or if there are two or more adjoining spots, each 2 ins. or over in length, the same responsibility to apply to mate wheel, regardless of length of slid spot. A separate defect card to be furnished in the case of wrought-steel or steel-tired wheels."

Rules 70, 74, 80, 83 and 98 have "forged" changed to "wrought."

Rule 94, an addition as follows: "Except as follows: In the case of repairs covered by defect card, if the owner changes the original standard of parts so involved, the charge must be no greater than if original design had been followed. If owner elects to dismantle the body or trucks, or both, charge may be made for such material as would have been required for the repairs covered by the defect card, but no labor shall be charged in such case, except in so far



as labor is already included in M. C. B. prices for material."

Rule 95 to have new paragraph as follows: "Couplers, including yokes, springs, followers, and friction draught gears complete, when lost with the coupler."

Rule 96 to be corrected by changing the 4 columns for scrap credits on pg. 110 into 1 column, "credit for scrap;" also eliminate second paragraph and form on pg. 109.

Rule 97 to change "bills of statement" to "billing repair cards."

Rule 108, to be changed to read: "No labor to be charged for the inspection of cars, testing or adjusting of angle cocks or tightening unions; no charge to be made for the material or labor of lubrication."

Rule 112, heading to be changed to: "Settlement for destroyed or damaged cars."

Rule 120, disposition of worn out cars, to read: "Where the labor cost of repairs exceeds 10% of the base price of car body, as given in rule 116, such car shall be jointly inspected by handling line and a representative of car owner or of a disinterested line (whichever can be most conveniently obtained), and form furnished as shown on pg. 105, showing all defects found on car and an estimated total cost of the repairs. Upon receipt of this information, owner must either authorize destruction or repairs. In the latter case owner must forward to handling company necessary plans and specifications for such repairs. If owner authorizes destruction, handling line shall allow credit for all material at M. C. B. scrap prices, less labor cost of destruction. The base price of car body under rule 116, as referred to above, not to include value of air brakes, or other additions for special items as referred to in rule 116."

Rule 122, in third paragraph, change "should" to "must"; and add additional sentence: "A separate bill, with copy of freight or express bill attached, should be rendered for the freight or express charges, showing reference to bill covering repairs."

Passenger Car Rules.—Rule 3, last two paragraphs of c, called d.

Rule 4, new paragraph: "Billing repair cards shall be furnished in all cases where repairs have been made."

Rule 10, after "inches" in third line from bottom, add: "or having seamy journals, fillets in back shoulder worn out, the length of journal increased  $\frac{1}{2}$  in. over standard length, or collars broken off or worn to  $\frac{1}{4}$  in. or less under fair usage."

Rule 15, change "spot" in third line to "surface."

### Report of Committee on Forging Specifications.

The American Railway Master Mechanics' Association committee, C. D. Young, Engineer of Tests, Pennsylvania Rd., chairman, submitted a report of which the following is an abstract: The committee issued a circular to the members, in which criticisms were requested on certain fibre stress figures to be used in heat treated carbon and alloy steel materials for forgings. Replies developed that there was little information available covering the results of the use of this material and the committee is, therefore, not prepared to recommend final figures for proper stresses for these heat treated parts, but feels that the following table expresses the maximum fibre stresses which should be used in this grade of material in the design and, presents it to the association as information, suggesting that it be submitted as recommended practice, with the understanding that this subject will again be reviewed after more extended experience of

the membership before considering it for advancement as an association standard:

	Heat-treated carbon. Tension and com- pression.	Alloy. Tension and com- pression.	Bend- ing.	Bend- ing.
Main and parallel rods .....	10,000	14,000	12,000	17,000
Piston rods .....	11,000	15,000	13,500	18,000
Driving axles .....		20,000		24,000
Crank pins .....		17,000		20,000

After consideration of the criticisms of a specification for alloy steel forgings of the chrome-nickel type, and of the quenched and tempered carbon steel and alloy steel (chrome-vanadium type) specifications, the committee recommends the following: That the present standard specifications for quenched and tempered carbon steel axles, shafts and other forgings for locomotives and cars, pg. 510, 1914 Proceedings, be modified in accordance with the proposed specifications for quenched and tempered carbon steel forgings as submitted in the report; this is in order to harmonize this specification with the alloy steel specifications and also includes a recommended proof test. That the present specifications for alloy steel forgings, pg. 505, 1914 Proceedings, be modified as submitted in the report; this change consists in adding to the present alloy steel specifications for chrome vanadium, a chrome-nickel alloy and also a recommended proof test. The committee recommends that these be submitted to letter ballot as recommended practice.

### Report of Committee on Prices for Labor and Material.

The Master Car Builders' Association committee, F. H. Clark, General Superintendent of Motive Power, Baltimore and Ohio Rd., chairman, submitted a report of which the following is an abstract: The special committee appointed to suggest additional prices or modifications of present prices in the rules of interchange, did not prepare a circular of inquiry this year, covering freight car price rules, because it was thought proper by the committee to review the work already done and make only such changes as would make the rules clearer, so they would be more readily understood. It was found necessary, however, to add some additional items and prices for both labor and material that were not covered in the present rules.

Changes were made in the scrap prices for axles and for wheels from dismantled cars, and the prices for new wrought steel wheels based on new prices for scrapped wheels. Changes were also made in the credits for air brake hose fittings, and prices for pipe nipple on end of train line, release rod, triple piston and ring, triple main piston and ring, K type triple piston, K type main piston, triple piston ring, and a number of other small fittings. Changes were made in computing the prices for lumber. A new list of prices for the maintenance of passenger equipment is also included.

### Report of Committee on Compensation for Car Repairs.

The Master Car Builders' Association committee, D. F. Crawford, General Superintendent of Motive Power, Pennsylvania Lines West, submitted a report of which the following is an abstract: It was concluded that it is proper that those making repairs to cars should be fully reimbursed for the actual expense incurred by them, including what are generally referred to as overhead charges, and that there should be added to the direct labor cost an allowance for the

expenditures made for: Direct supervision, to include the proper proportion of the wages of foremen, assistant foremen, gang foremen, clerks, etc., chargeable to the actual repairing of freight cars; amounts paid all other men whose time is properly chargeable to freight-car repairs, excepting those engaged in the manufacture of stock material; shop expenses, the proportion assignable to the actual repairing of freight cars, the expenditures for general employees, power, heating, lighting, shop supplies, and incidental expenses connected with shop operation; shop switching, as provided for by the authorized accounting system; superintendence, the proportion properly chargeable to freight car repairs of the salary and expenses of the general superintendents of motive power, mechanical superintendents, master car builders, superintendents of motive power, master mechanics, etc.; and the use of facilities, to include interest on the investment, depreciation, maintenance, insurance and taxes on that part of the plant or plants used for the repairing of freight cars. These allowances should be carefully segregated so that the allowances applicable to the repairs of cars, and those applicable to the manufacture of material, should be separate and distinct. As for material, an especially determined allowance, including an adequate amount for storehouse expenses, is required.

To determine as accurately as practicable what allowance should be made for the above items, the committee assigned the task of assembling the necessary data to a sub-committee, which submitted a series of 9 questions to the members. Replies were received from 58 railways owning 1,618,675 cars, and 11 private lines owning 52,102 cars. A summary of these replies showed that the average for the direct labor was 27.7 cts. an hour; direct labor plus direct supervision, 31.5 cts.; proportion of shop expenses, shop switching and superintendence, 9.4 cts.; a total of 41 cts. Consequently, as the average hourly payment for direct labor was 27.7 cts. an hour, and for direct labor and all supervision was 41.0 cts. an hour, an allotment of 48% must be added to the hourly payment for direct labor to fully reimburse those repairing freight cars, without any allowance for the use of facilities, such as interest on the investment, depreciation, taxes and insurance on, and maintenance of, shops, repair tracks, etc.

It is recommended that the prices for individual items of work performed, as now embodied in the code of rules of interchange of cars, be based on the average time required to perform each operation. That to simplify calculation and accounting a rate of 28 cts. an hour be used as representing the average hourly cost for direct labor, adding to this amount 12 cts. an hour as meeting the requirements for overhead charges. The reduction in the total hourly charge from 41 cts. to 40 cts. reduces the overhead rate from 48% to 44.4%, and is felt advisable, due to the fact that November, for which the figures were obtained, might not generally be considered as a representative month. That fixed prices, including labor and material, be determined and listed separately for such items as: Application of cotter keys, knuckle pins, knuckles, air hose, safety appliances, brake shoes, and kindred repairs such as are ordinarily done in classification yards. These fixed prices to apply whether the work is performed in the classification yards, shops or repair yards. That this report, with the approval of the convention, be referred to the committee on prices for labor and material, with such instructions as may be necessary to make effective the above recommendations.



### Report of Committee on Train Resistance and Tonnage Rating.

The American Railway Master Mechanics' committee, P. F. Smith, Jr., Superintendent of Motive Power, Pennsylvania Lines, chairman, submitted the following report:

Your committee has, in accordance with instructions, endeavored to get additional information to enable it to submit a final report at this convention. While some information has been available, yet we desire additional data as to the comparison of the drawbar pull curve of superheater locomotives, as compared with that of saturated locomotives. Also, we desire data as to the resistance of the 90 ton cars now coming into use. We will be able to obtain the information desired and submit a final report in 1916, and would ask permission to carry over the final report to that time.

### Report of Master Car Builders' Committee on Revision of Standards and Recommended Practice.

The Master Car Builders' Association committee, T. H. Goodnow, Assistant Superintendent of Car Department, Chicago and North Western Ry., submitted a report of which the following is an abstract: After due consideration of the present standards and recommended practices, together with replies from members to a circular of enquiry, also requests involving standards presented through the Secretary, a number of recommendations have been made, minor errors corrected, and a large number of suggestions not concurred in. Only the recommended changes are dealt with in this abstract.

Journals on M. C. B. sheets 3, 6, 9, 12 and 12-C should have journal box wedges provided with a hole through the flange of the wedge for all sizes of journals to facilitate the wedge removal by use of a packing hook. The marking of freight equipment cars recommended in 1914 and lost by letter ballot is again recommended, with the omission of the light weight stencilling at the end of the car. Additional sizes for lining for outside framed cars is recommended for sides and ends. Springs on sheets H and H-1 to be made standard. That committee be appointed to develop a standard steam hose coupling. Committee to be appointed to investigate safety chains for interchange of passenger equipment. A classification for house car equipped for carrying liquids, etc., as follows: XT—Box tank car, a box car without doors, metal lined, or enclosing tank for the shipment of water or other liquids. The description of RA meat and refrigerator cars should read: "A car with body, doors and hatch plugs equipped with insulation, brine ice tanks, and without ventilating devices;" the RM car to read: "This car has body, doors and hatch plugs equipped with insulation; with trap doors in the roof for admittance of ice and salt; also water seals inside the car;" the RS car as follows: "Standard refrigerator, a car with body, doors and hatch plugs equipped with insulation with ice tanks and either with or without ventilating devices; GF gondola car, a car equipped with coke racks and having solid bottoms; GS gondola car, a car with fixed sides and ends, and flat bottom composed of dump doors at inside edge, and dumping to the side of track."

Height from rail to top of platform buffer for passenger cars established nominally at 51 ins. U. S. railway mail service full postal car specifications and floor plans to be in-

corporated in M.C.B. proceedings. Method of making insulation tests, together with description of testing machine as approved by U. S. government railway mail service to be incorporated in the M.C.B. proceedings.

The following disposition was made of the subjects: approved, 6; Secretary instructed to make changes or additions, 10; referred to committee on car wheels, 1; referred to committee on car trucks, 1; referred to committee on train lighting and equipment, 1; referred to committee on draught gear, 2; referred to special committee to be appointed, 2; and referred to letter ballot for change in standard or recommended practice, 14.

### Report of Committee on Train Lighting.

The Master Car Builders' Association committee, T. R. Cook, Assistant Engineer of Motive Power, Pennsylvania Lines, chairman, submitted a report of which the following is an abstract:

One of the most important items that the committee has under consideration is the standardization of armature pulleys. This was of such importance that it was felt desirable to obtain as broad a view as possible on the matter, and the committee held a joint meeting with the Association of Railway Electrical Engineers' committee on standards, and with various axle dynamo manufacturing companies' representatives. The committee also invited to this meeting representatives from all railway companies operating a considerable number of axle dynamos, who did not have representation on the committee. New pulley designs were evolved, which were recommended for use on all new and remodeled axle dynamos provided with ball or roller bearings. These provide for either 8 or 11 in. pulleys. It was also recommended that in all new or remodeled ball or roller bearing axle dynamos the details of the pulley end of the armature shaft shall be in accordance with prescribed dimensions shown in a drawing attached to the report.

### Report of Committee on Dimensions for Flange and Screw Couplings for Injectors.

The American Railway Master Mechanics' Association committee, M. H. Haig, Mechanical Engineer, Atcheson, Topeka and Santa Fe Ry., chairman, and of which W. H. Winterrowd, Assistant to the Chief Mechanical Engineer, C.P.R., is a member, submitted a report of which the following is an abstract: A pitch of 10 threads per inch could be adopted with the least expense to all, of a modified U.S. thread, for use on all injector couplings. Investigation shows that certain sizes of coupling nuts can be selected as standard for certain sizes of iron and copper pipe, and that certain sizes of sleeves can be adopted as standard for use with definite sizes of nuts and pipes. Diagrams of these are shown in the report. It would be impracticable to attempt a universal set of sizes or capacities of injectors, or a set of common pipe or coupling sizes for each size of injector. The proposed standards for injector nuts include greater thicknesses throughout than common practice to prevent abuse with improper tools.

Copper pipe extending the full length of the coupling sleeve is favored under all conditions. When brazed, the end should be belled out to fit the chamfer at the upper end of each sleeve. The inside diameter of sleeves for iron pipe should be smaller in many cases than the inside

diameter of the pipe. Flange couplings should be made of forged steel.

### Report of Committee on Specifications and Test of Materials.

The Master Car Builders' Association committee, C. D. Young, Engineer of Tests, Pennsylvania Rd., chairman, and of which A. Copony, Master Car Builder, Western Lines, G.T.R., and E. P. Tilt, Engineer of Tests, C.P.R., are members, submitted a report of which the following is an abstract: The following newly draughted specifications are recommended for submission to the members: Structural steel, steel plate and steel sheets for passenger equipment cars; structural steel, steel plate and steel sheets for freight equipment cars; malleable steel castings for passenger and freight equipment cars; miscellaneous steel castings for passenger and freight equipment cars; journal bearings for passenger and freight equipment cars; mild steel bars for passenger and freight equipment cars; rivet steel and rivets for passenger and freight equipment cars; and galvanized sheets for passenger and freight equipment cars.

The specifications for chain for passenger and freight equipment cars to be altered, so as to make possible the use of electric welded chain. A digester test is recommended to be added to the physical properties and tests in the specifications for steam heat hose for passenger equipment cars. In this section also, add the word "steam" after the name of the road on the label. Changes are proposed in the standard specifications for air brake hose for passenger and freight equipment, as laid down in the report. On the request of the Manufacturers' Association, a list of 9 test laboratories is given where tests may be made in accordance with the requirements of the air brake hose specifications. The coupler specifications are proposed to be changed so that for every 1,000 ordered, there will be furnished by the manufacturer 1,008 instead of 1,013 as formerly, reducing by 5 the number to be subjected to the strike test.

### Report of Committee on Master Mechanics' Subjects.

The American Railway Master Mechanics' committee, A. W. Gibbs, Chief Mechanical Engineer, Pennsylvania Rd., presented the following report:

That the present standing committee be continued. That the following subjects be assigned to special committees: Equalization of long locomotives, so as to secure the most effective guiding from the trucks, both leading and trailing; tender trucks, best practice and type of tender truck for passenger locomotives, has a swing truck any advantage over a rigid truck?; reciprocating and revolving weights, committee to report on possibilities of lightening; transmission of electric power from motors to driving wheels of electric locomotives, committee to report on the progress in this direction; use of pyrometers on superheater locomotives; piston valves, rings and bushings, best material and sizes, with particular reference to superheated steam; metal pilot designs; and modernizing existing locomotives, which can then remain in service for 10 or 15 years.

That the following subjects be assigned for topical discussion: Advantages, if any, of compounding superheater locomotives; side bearings on tenders; tender derailments, causes and remedies; road instruction for engineers and firemen; and cross head design.



## Report of Committee on Superheater Locomotives.

The American Railway Master Mechanics' Committee, H. H. Vaughan, Consulting Engineer, C.P.R., chairman, did not submit any written report in view of the lack of new material concerning superheater locomotives. It submitted, however, the results of further tests made by the Pennsylvania Rd. on its class E 6s locomotives as published in the Pennsylvania Rd. pamphlet no. 27 with a recommendation that it be incorporated in the proceedings, which was adopted.

## W. H. Flynn on Compounding Superheater Locomotives.

In the discussion on compounding superheater locomotives at the American Railway Master Mechanics' Association's convention at Atlantic City, W. H. Flynn, Superintendent of Motive Power, Michigan Central Rd., and formerly Master Mechanic of its Canada Southern Division, said: We have 90 compound locomotives on our division, and about 12 of them are equipped with superheaters. The results have so pleased the mechanical department, as well as the operating department, that I think I am safe in saying that we will apply superheaters to the balance. On the division where we conducted one of our most important tests we found we could increase the tonnage of the superheater compound over the saturated compound 15%. That seems an astonishing figure, but it is true; and the superheater compound would handle that increased tonnage more satisfactorily than a saturated compound would do it, and not burn quite as much coal. These are used in slow speed freight service. We had occasion to put one of these superheater compounds on a passenger train, and we found the locomotive would run about 10 or 12 miles faster than a locomotive of the same class without the superheater-compound arrangements.

## Disposition of Committee's Reports at Atlantic City.

**American Railway Master Mechanics' Association.**—The committee on locomotive headlights was continued another year. The report of the committee on the design, construction and inspection of locomotive boilers was accepted, and the recommendations will be submitted to a letter ballot. The recommendations of the committee on superheater locomotives was adopted. The committee on flange and screw couplings for injectors was continued and directed to submit another report next year.

**Master Car Builders' Association.**—Revision of standard and recommended practice; motion carried that committee include in its report a recommendation in favor of adopting the left side as the standard location of passenger car uncoupling levers, and that it be submitted to letter ballot. Train brake and signal equipment; conductor's valve, clasp truck brakes and hose coupling gasket gauge to be submitted to letter ballot as recommended practice. Car wheels; report received and will be printed, and the secretary will arrange for making the curves as suggested. Arbitration, prices for labor and material, compensation for car repairs, and settlement prices for reinforced wooden cars; accepted. Couplers; the sense of the convention was that the strength of the coupler and its resultant weight as presented by the committee is necessary to provide for the proper strength and service in inter-

change. Safety appliances; accepted. Loading rules; recommended to be submitted to letter ballot. Car construction; referred to letter ballot the specifications for box car outside hung doors for new cars, the rules under draught gear, and recommendations concerning malleable cast iron and shearing values of structural, rivet and mild steel. Specifications and tests for material; to be submitted to letter ballot for adoption as recommended practice.

## Election of Railway Mechanical Association's Officials.

The following elections took place at Atlantic City:

**American Railway Master Mechanics' Association.**—President, E. W. Pratt, Assistant Superintendent of Motive Power, Chicago and North Western Ry.; First Vice President, W. Schlafge, General Mechanical Superintendent, Erie Rd.; Second Vice President, F. H. Clark, General Superintendent of Motive Power, Baltimore and Ohio Rd.; Third Vice President, W. J. Tolbert, General Mechanical Superintendent, Chicago, Rock Island and Pacific Ry.; Treasurer, Angus Sinclair, Editor, Railway and Locomotive Engineering; executive members, C. H. Hogan, Assistant Superintendent of Motive Power, New York Central Rd., J. F. DeVoy, Assistant Superintendent of Motive Power, Chicago, Milwaukee and St. Paul Ry., J. T. Wallis, General Superintendent of Motive Power, Pennsylvania Rd.

**Master Car Builders' Association.**—President, D. R. MacBain, Superintendent of Motive Power and Rolling Stock, New York Central Lines West; First Vice President, R. W. Burnett, ex General Master Car Builder, C. P. R.; Second Vice President, C. E. Chambers, Superintendent of Motive Power, Central Rd. of New Jersey; Third Vice President, T. W. Demarest, Superintendent of Motive Power, Pennsylvania Lines West; Treasurer, J. S. Lentz, Master Car Builder, Lehigh Valley Rd.; executive members, C. E. Fuller, Superintendent of Motive Power, Union Pacific Rd., F. F. Gaines, Superintendent of Motive Power, Central of Georgia Ry., and I. S. Downing, General Master Car Builder, Cleveland, Cincinnati, Chicago and St. Louis Ry.

**Railway Supply Manufacturers' Association.**—President, O. F. Ostby, Commercial Acetylene Railway Light and Signal Co.; Vice President, E. H. Walker, Standard Coupler Co.; Executive Committee, First District, J. G. Platt, Hunt-Spiller Manufacturing Corporation, Second District, C. D. Eaton, American Car and Foundry Co., Fourth District, J. F. Schurch, Damascus Brake Beam Co., and Seventh District, C. B. Cass, Westinghouse Air Brake Co.

## Canadian Railway Officials at Atlantic City Conventions.

Among the Canadian and allied railway officials, etc., in attendance were the following:

**GRAND TRUNK RY.**—A. A. Maver and R. Patterson, Master Mechanics; J. Powell, Chief Draughtsman, Motive Power Department and Secretary, Canadian Railway Club; J. Coleman, Superintendent Car Department; J. Hendry and T. A. Treleaven, Master Car Builders; K. F. Nystrom, Chief Draughtsman, Car Department.

C. W. Van Buren, General Master Car Builder, Canadian Pacific Ry.; A. L. Graburn, Mechanical Engineer, Canadian Northern Ry.; M. Goodrich, Master Mechanic, Ottawa and New York Ry.; W. T. Kuhn, Superintendent of Motive Power, Toronto,

Hamilton and Buffalo Ry.; W. H. Flynn, Superintendent of Motive Power, Michigan Central Rd.; W. Gillespie, Master Car Builder, Central Vermont Ry.; W. E. Ladley, Superintendent of Motive Power, Reid Newfoundland Co.; G. R. Joughins, Superintendent of Motive Power, Intercolonial Ry.; H. J. White, General Car Foreman, Canadian Northern Quebec Ry.; and G. N. Fosnot, Chief Clerk to Master Mechanic, Central Vermont Ry.

J. Powell, Chief Draughtsman, Motive Power Department, G.T.R., and Secretary, Canadian Railway Club, was also among those present at the annual meeting of the Society of Railway Club Secretaries at Atlantic City, June 12.

## Railway Supply Exhibits at the Atlantic City Convention.

The Railway Supply Manufacturers' Association exhibit, was, as usual, of a very comprehensive nature. While the total of exhibits was somewhat smaller than last year, there was a larger number of new devices than has hitherto been the case. Among the principal exhibitors were the following,—

American Brake Shoe & Foundry Co., Mahwah, N. J.—Locomotive and car brake shoes illustrating modern practice.

Anchor Packing Co., Philadelphia, Pa.—Packing for air pumps; throttles and general railway purposes.

Buffalo Brake Beam Co., New York, N.Y.—Buffalo freight brake beams; truss beams with malleable iron or forged steel struts; beams for E. & L. equipment and all classes of electrical equipment for standard, broad and narrow gauge; Buffalo passenger brake beams for all classes of service including P. C. and L. N. equipment with automatically adjustable heads and safety locks.

Dearborn Chemical Co., Chicago, Ill.—Water treating preparations scientifically prepared to suit conditions shown by analysis of the boiler water supplies, for prevention of scale, corrosion, pitting and foaming.

Detroit Lubricator Co., Detroit, Mich.—Bullseye locomotive lubricators; flange lubricators; air cylinder lubricators; sight feed lubricators; force feed oilers; Detroit packless radiator valves.

DuPont Fabrikoid Co., Wilmington, Del.—Fabrikoid car window curtain material; Fabrikoid vestibule curtain material; Fabrikoid car seat upholstery material.

Edison Storage Battery Co., Orange, N. J.—Edison storage batteries for train lighting; industrial shop and baggage trucks; multiple unit control; locomotive headlights; railway signaling; inspection lamps.

Flannery Bolt Co., Pittsburg, Pa.—Tate flexible staybolts, including standard water space stays, flush type, adjustable crown stays, section of boiler showing typical installations, tools for installation of Tate bolts, photographic views of various installations and display at the Panama Pacific Exposition. F. B. C. nut locks for freight and passenger cars.

Franklin Railway Supply Co., New York, N.Y.—Franklin fire door; Franklin water joint.

Galena-Signal Oil Co., Franklin, Pa.—Reception booth.

Garlock Packing Co., Palmyra, N. Y.—Air pump and throttle packings; air brake and triple valve gaskets; special packings for accumulators and compressors; general line of shop packings.

Goldschmidt Thermit Co., New York, N. Y.—All materials for welding locomotive frames and other broken locomotive parts; large sample welds on crank shafts; photo-



graphs of important welding operations; demonstrations of the process as applied to pipe welding and samples of metals and alloys produced free from carbon by the Thermit process.

Hunt Spiller Manufacturing Corporation, South Boston, Mass. Cylinder bushings; cylinder packing; piston heads; valve bushings; valve packing; valve bull rings; eccentrics and straps; crosshead shoes; driving boxes; pedestal shoes and wedges; rod bushes.

Independent Pneumatic Tool Co., Chicago, Ill.—Reception booth.

Johns-Manville Co., H. W., New York, N. Y.—Magnesia lagging; fire felt lagging; vitribestos; pipe coverings; air pump and throttle packing; sheet packing; gaskets; millboard; transite and ebony asbestos wood; asbestos shingles; friction and rubber tapes; electrical materials; fibre and sectional conduit; dry batteries, asbestos roofings; asbestos corrugated roofing; waterproofing and mastic; J-M expander rings; hair felt insulators; passenger and refrigerator car insulations; Vulcabeston; high temperature and insulating cements; smoke jacks; cork; armored hose; brake band lining; asbestos-metallic brake blocks.

Locomotive Superheater Co., New York, N. Y.—Locomotive superheaters and accessories.

McCord & Company, Chicago, Ill.—Steel and malleable journal boxes; force feed locomotive lubricators.

Norton, A. O., Inc., Boston, Mass.—Self lowering high speed jacks.

Safety Car Heating & Lighting Co., New York, N. Y.—Safety under-frame car lighting equipment; Pintsch mantle car lighting equipment; gas and electric lighting fixtures safety electric fan; oxy-Pintsch metal cutting and welding equipment.

Westinghouse Air Brake Co., Pittsburg, Pa.—Reception booth.

Westinghouse Electric & Manufacturing Company, East Pittsburg, Pa.—Reception booth. Lighted with 200-watt type C Mazda lamps.

Wheel Truing Brake Shoe Co., Detroit, Mich.—Samples of abrasive brake shoes for truing up car wheels and locomotive driver wheels.

The Quebec Transportation Club's annual meeting was held at Kent House, Montmorency Falls, June 1, when there was a large attendance. Following are the officers and committee for the current year.—Hon. President, H. G. Matthews, General Manager, Quebec Ry. Light, Heat and Power Co.; First Hon. Vice President, E. O. Grundy, General Freight and Passenger Agent, Quebec Central Ry.; Second Hon. Vice President, W. M. MacPherson, Manager, White Star-Dominion Line; President, J. S. Thom, Manager, Quebec Transportation Co.; First Vice President, J. H. Davidson, Superintendent, Lake St. John Division, Quebec Grand Division, Canadian Northern Ry.; Second Vice President, J. A. Everell, Superintendent, Quebec Ry. Light and Power Co.; Secretary-Treasurer, A. F. Dion, Traffic Manager, Quebec Harbor Commission; Committee, G. J. P. Moore, W. J. Thompson, J. T. Cassels, J. A. Cote and J. A. Vallerand.

Canadian Society of Civil Engineers, Vancouver Branch.—Following are the officers for the current year elected at the annual meeting, June 3:—President, R. F. Hayward; Vice President, H. C. Carry; Secretary-Treasurer, A. H. Robertson; Executive Committee: D. Cameron, C. E. Cartwright, A. G. Dalziel and E. G. Matheson. G. R. G. Conway, T. H. White and N. Kerr, being members of the executive council of the association are ex-officio members of the Vancouver Executive Committee.

## Birthdays of Transportation Men in July.

Many happy returns of the day to:—J. H. Black, ex-Superintendent, Timiskaming and Northern Ontario Ry.; now at Cobalt, Ont., born near Smiths Falls, Ont., July 8, 1874.

M. S. Blaiklock, Engineer Maintenance of Way, G.T.R., Montreal, born at Quebec, July 19, 1859.

D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co., born at St. Thomas de Montmagny, Que., July 25, 1877.

H. F. Bradley, Passenger Manager, Allan Line Steamship Co., Montreal, born at Waterville, Que., July 20, 1876.

D'Alton C. Coleman, Assistant General Manager, Western Lines, C.P.R., Winnipeg, born at Carleton Place, Ont., July 9, 1879.

Geo. Collins, Superintendent, Ottawa Division, Ontario Grand Division, Canadian Northern Ry., Trenton, born at Kingston, Ont., July 20, 1860.

G. C. Conn, Vice President, Pere Marquette Rd., Detroit, Mich., born at Woburn, Mass., July 1, 1867.

D. D'E. Cooper, Canadian Freight Agent, Lehigh Valley Rd., Toronto, born at Buffalo, N.Y., July 8, 1862.

John Corbett, ex-General Foreign Freight Agent, C.P.R., Montreal, born in Lanarkshire, Scotland, July 19, 1863.

H. Darling, Locomotive Foreman, G.T. Pacific Ry., Smithers, B.C., born in Northumberland, Eng., July 27, 1873.

S. E. Dewey, Commercial Agent, All Rail Line, G.T.R., New York, born at Beckenham, Kent, Eng., July 4, 1879.

F. C. Foy, Canadian Passenger Agent, New York Central Lines, Toronto, born there, July 5, 1881.

J. F. Gildea, District Master Mechanic, C. P.R., Montreal, born at Strood Park, near Horsham, Sussex, Eng., July 7, 1884.

A. D. Huff, ex-Division Freight Agent, G.T.R., Ottawa, now Traffic Manager, Laurentide Co., Montreal, born at Chatham, Ont., July 17, 1866.

C. W. Johnston, Assistant to Passenger Traffic Manager, G.T.R., Montreal, born at Actonvale, Que., July 27, 1879.

A. E. Lock, Car Accountant, Toronto, Hamilton and Buffalo Ry., Hamilton, Ont., born at Albany, N.Y., July 14, 1879.

R. G. McNeillie, Assistant General Passenger Agent, Western Lines, C.P.R., Winnipeg, Man., born at Lindsay, Ont., July 1, 1883.

H. D. Mackenzie, District Master Mechanic, Intercolonial Ry., Stellarton, N.S., born at Churchillville, N.S., July 22, 1864.

T. J. Maguire, Accountant Quebec Central Ry., Sherbrooke, Que., born at Quebec, July 31, 1860.

J. E. Morazain, Assistant Superintendent, District 3, Eastern Division, C.P.R., Montreal, born at Wheatland, Que., July 31, 1875.

R. E. Perry, Assistant General Freight Agent, Canadian Government Railways, Moncton, N.B., born at Drayton, Ont., July 5, 1876.

R. Preston, Assistant Superintendent of Motive Power, Western Lines, C.P.R., Winnipeg, born at Toronto, July 28, 1863.

J. E. Quick, General Baggage Agent, G.T.R. and G.T.P.R., Toronto, born at Richmond, Ontario Co., N.Y., July 10, 1851.

G. Ruel, Chief Solicitor, Canadian Northern Ry., Toronto, born at St. John, N.B., July 5, 1866.

P. E. Ryan, Secretary, National Transcontinental Railway Commission, Ottawa, born there July 26, 1876.

Geo. Stephen, General Freight Agent, Canadian Northern Ry., Winnipeg, born at Montreal, July 5, 1876.

R. F. Struthers, Chief Inspector of Time Service, C.P.R., Winnipeg, born at Stratford, Ont., July 31, 1879.

Sir Thos. Tait, President, Fredericton and Grand Lake Ry. and Coal Co., Montreal, born at Melbourne, Que., July 24, 1864.

## Greater Winnipeg Water District Railway.

In connection with the project for securing a water supply for Winnipeg and surrounding municipalities from Shoal Lake, adjoining Lake of the Woods, the Greater Winnipeg Water District Commission had a big problem to be solved before bids could be advertised—that of transporting materials to the work. In addition to its great length the aqueduct line traverses a swampy country which is well nigh impassable except when the ground is frozen, and it was realized that reasonable bids for the construction of the works could not be secured until means of access to the remote parts could be provided. The Commission decided, therefore, to open up the territory for construction purposes by building its own railway and operating the line with its own forces, charging the contractors for the transportation of materials according to a schedule of rates published in advance of the receipt of tenders. The route, about 90 miles long, exclusive of sidings, was surveyed, built and placed in service in a single working season, a feat of no mean magnitude considering the character of the country. The line is laid with 60-lb. rails, is well drained and designed for heavy and continuous traffic. It is hoped, on each contract, to maintain a rate of progress sufficient to complete the aqueduct by the autumn of 1918, and it was of first importance that no delays in the delivery of materials should be caused by roadbed defects.

The terminus of the line is at Deacon, south and west of Transcona, where the Grand Trunk Pacific shops are located. A station and a storehouse for cement and other freight has been erected at Deacon. Cars of supplies, received from foreign roads, are delivered on the transfer tracks at Paddington, near Winnipeg, and picked up by the district's train crews and unloaded at Deacon or hauled to the work. The road is a single track line with about ten permanent sidings and spurs, making a total trackage of about 105 miles, and arrangements have been made to cut the track and put in switches, if necessary, at points where contractors may best be served.

The contractors are arranging their plants on a plan calling for movable wooden platforms to lie lengthwise of the main track and span the railway ditch. These platforms, upon which the sand and gravel will be dumped direct from the cars, are in units that can be picked up and moved ahead successively as construction progresses. At each camp the contractors will provide storage for cement. At the eastern terminal of the line, at Indian Bay, are yards and storage tracks. The railway follows the aqueduct line closely for almost its entire length.

Canadian Overseas Railway Construction Corps. In the list of officers of this corps given in Canadian Railway and Marine World for June it was stated that there were two vacancies, viz., No. 1 Company, Mechanical Engineer, rank captain; and No. 2 Company, Bridge Engineer, rank captain. We are advised that these have been filled by the appointment of Lieutenants D. Hillman and H. Wellwood respectively, they having been recommended for promotion by the officer commanding, Lt. Col. C. W. P. Ramsey.



## Railway Development.

### Projected Lines, Surveys, Construction, Betterments, Etc.

**Alberta and Great Waterways Ry.**—Ballasting has been completed on the first 50 miles of track laid out of Carbondale, the junction with the Edmonton, Dunvegan and British Columbia Ry., and the gangs are engaged on ballasting the remaining 85 miles on which track has been laid. It is expected to complete the ballasting and other finishing work to Lac la Biche, mileage 114, by Sept. 1. At this point the company is building a hotel for tourist traffic. Grading is in progress between the end of steel and Fort McMurray, 165 miles, which it is expected to complete this season. (June, pg. 212.)

**Athabasca and Fort Vermillion Ry.**—A. G. Mackay, Edmonton, Alberta, solicitor for the company, is reported to have given out the following statement, June 11: "We have been busy in formulating plans ever since the charter was granted by the Legislature. Through the Hudson's Bay Co. I have got into touch with C. E. Law, Canadian representative of D. A. Thomas of Cardiff, Wales, who is interested in the Pacific, Peace River and Athabasca Ry. As a result of three interviews matters have been got into working shape, and all the necessary documents are signed and all forces amalgamated for business. Within two weeks, one of the ablest expert bridge engineers on the continent, and one of the most reliable and competent bridge builders with an experienced staff will reach Athabasca Landing to begin work. After the question of the crossing of the river has been settled reconnaissance work will be pushed throughout the entire route from Athabasca to Fort Vermillion. It is expected that this survey work will be completed in three months. If the project is found to be a feasible one, application will be made to the Dominion Parliament and the Provincial Legislature, and if this is given construction work will be started at once, with the expectation of completing the line within two years." (May, pg. 170.)

**Central Canada Ry.**—A subcontract is reported let to J. Timothy for grading the last 22 miles to Peace River Crossing, Alta. Track laying is reported completed to mileage 28 from McLennan, the junction with the Edmonton, Dunvegan and British Columbia Ry. The grading to be done includes some very heavy work, but it is expected to have it finished by Oct. 1. Track laying is expected to be completed and the line ready for operation by Dec. 31. (June, pg. 212.)

**Edmonton, Dunvegan and British Columbia Ry.**—Edmonton, Alberta, papers June 18, report that a subcontract has been let for the grading of the whole or part of the 60 mile line from the Spirit River to the Grand Prairie settlement to G. Webster. (June, pg. 212.)

**Edmonton, Dunvegan and British Columbia Ry.**—Work has been commenced on the piers and abutments for the bridge across Big Smoky River, mileage 290 from Edmonton, Alta., and grading is in progress all the way to the Spirit River, mileage 357 from Edmonton. It is expected to complete construction to this point this year. Ballasting to the Big Smoky River has been fully completed for the first 200 miles, and the gangs are at work on the remaining 90 miles. (June, pg. 212.)

**Glengarry and Stormont Ry.**—This newly completed railway from St. Polycarpe, Que., 27.5 miles, was opened for traffic May 31. It is leased to the C.P.R., and is being operated as part of the Eastern Division.

**Intercolonial Ry.**—We are officially advised that a contract has been let to J. W. McManus and Co., Moncton, N.B., for building the industrial spur line at Bathurst, N.B., 2.3 miles.

Contracts have been let for buildings as follows: Combined station and freight shed, Trenton, N.S., Rhodes, Curry and Co., Ltd., Amherst, N.S.; combined station and freight shed, Derby Jct., N.B.; and station building at Humphreys, N.B., McLaggan, McBean and Bell; freight shed, 400 x 40 ft., at Levis, Que., G. B. Mitchell, Montreal.

Tenders are under consideration for building a number of small concrete culverts and arches, and the concrete substructures for steel viaducts at Ottawa Brook and Walker's Gulch, on the Sydney, N.S., Sub-division.

Press reports state that in addition to the regular season's work on the Sydney Sub-division, a number of steel bridges will be renewed and strengthened.

The general work of betterments for this year includes the relaying of about 75 miles with new 85 lb. rails. An Atlantic type shovel has been bought for ballasting, and there are now at work on the line four steam shovels getting out material. (June, pg. 212.)

**The Kent Coal and Ry. Co.,** which was incorporated by the New Brunswick Legislature last session, is authorized to build the following lines: From between Kent Jct. and Harcourt on the Intercolonial Ry. to Chipman; from Chipman to Minto, and from Rexton to Richibucto on the Kent Northern Ry. to Richibucto Head, all of which lines are to be subject to the approval of the Lieutenant Governor in Council. The company is authorized to acquire the Kent Northern Ry., and may acquire stock or other securities in any coal company owning coal areas in the counties of Queens or Sunbury; construct wharves or docks, and for the purpose of its business may navigate passenger vessels. The authorized capital is \$400,000, and the company may issue bonds for \$25,000 a mile in respect of its projected railway. The office of the company is fixed at Richibucto, N.B., the provisional directors being: W. W. Duncan, T. J. Lannen, A. L. Marsh, A. C. McNaughten, F. Erickson Brown, Toronto; T. J. Bourque, Richibucto, N.B.; A. R. Slipp, Fredericton, N.B., and D. K. Hazen, St. John.

The Kent Northern Ry., which the company is authorized to acquire, extends from Kent Jct. on the Intercolonial Ry. to Richibucto, N.B., 27 miles, and operates under lease the St. Louis and Richibucto Ry., 7 miles. The company was incorporated by the New Brunswick Legislature in 1874 and the line was opened for traffic in 1883. The St. L. and R. Ry. Co. was incorporated by the New Brunswick Legislature in 1882, and the line was opened in 1885. After a somewhat checkered career, the line was leased to the K.N.R., but it does not appear to be regularly operated. (June, pg. 212.)

**Kettle Valley Lines.**—The first train on the Kettle Valley Ry. as a factor in the east and west traffic of southern British Columbia was run between Midway and Merritt, 275 miles, May 31, thereby connecting the C.P.R. Crowsnest Pass line with the transcontinental line. The Penticton Board of Trade and the municipal council entertained K.V.R. and C.P.R. officials, who travelled on the opening train. The line is leased to the C.P.R., and it is being operated in connection with that company's lines, under the

charge of O. E. Fisher, Superintendent, with offices at Penticton. The new line starts at Midway, and runs through to Merritt, 274.8 miles, which mileage includes 1.5 miles from South Penticton to the wharf in Penticton. From Princeton, mileage 71.3, to Brookmere, mileage 109.8, the track is owned by the Vancouver, Victoria and Eastern Ry. (G.N.R.), and is operated as a joint section with the K.V. Lines. At Merritt connection is made with the Nicola branch, which connects with the main transcontinental line at Spences Bridge. The other mileage operated is from Carson to Grand Forks, 4.00 miles, and from Grand Forks to Lynch Creek, 18.5 miles. The line also extends to Republic, Wash. (June, pg. 212.)

**Pacific Great Eastern Ry.**—Announcement has been made in Vancouver that through an arrangement with the Dominion and Provincial Governments funds have been provided for the continuance of construction between Vancouver and Fort George, B.C. The line is at present in operation for some miles out of North Vancouver toward Squamish, and from Squamish to Lillooet, 120 miles. Considerable work has been done between Lillooet and Fort George, and it is expected to have the line completed for a further 100 miles by the end of the year. The objective for the year's tracklaying is the Hundred Mile House in Cariboo district. (May, pg. 171.)

**Peace River Tramway and Navigation Co.**—The Board of Railway Commissioners has approved location plans for the projected lines at the Peace River Chutes, 5.00 miles, and along the north bank of the Peace River from Smith Landing to Fort Smith, Alta., 15 miles. (Jan., pg. 11.)

**Timiskaming and Northern Ontario Ry.**—The survey party, in charge of W. R. Maher, which has been working for some time along the Long Sault rapids on the Abitibi River, returned to Cochrane, June 6, their camp having been burned out. (May, pg. 173.)

**C.P.R. British Columbia Employees and the War.**—The company's records show that 206 of its employees in British Columbia have been engaged in active service in Europe, or are preparing for it. Of this number, eight are reported killed and three missing. The killed include, J. H. Avery, clerk, local freight office, Vancouver; R. Burns, chief clerk, Fuel Department, Vancouver; C. Dennehey, rod man, Nelson; A. Lee, trucker, Vancouver; H. Springthorpe, car cleaner, Vancouver; A. J. Stewart, laborer, Vancouver, and F. G. Olson, train clerk, Vancouver. The missing are, A. J. Cleeton, shed foreman, Rossland; L. C. Smith, civil engineer, Nelson, and S. B. Weber, clerk in Marine Superintendent's office, Vancouver.

**A Kettle Valley Ry. Construction Suit.**—Grant Smith and Co. have entered action in the British Columbia courts to recover \$699,609 balance claimed to be due for work on the line. The statement sets forth that the net cost of construction on the Penticton-Hydraulic Summit section was \$2,804,168.73, and the contractors' profit of 10% made the total amount due \$3,084,585.60. \$2,384,976.60 had been paid on account, leaving the amount claimed, on which the contractors claim interest from Oct. 21, 1914.

**Projected Elevator at Owen Sound.**—The Owen Sound, Ont., Town Council is considering the advisability of submitting a bylaw to the ratepayers, to authorize \$300,000 of debentures for the construction of a modern concrete elevator of 1,000,000 capacity. If the decision is made to build an elevator it will probably be placed under the management of a commission of three members.



## Progress on Rogers Pass Tunnel Construction, Canadian Pacific Railway.

The following table shows the progress made during Feb., Mar., April and May, and also the totals to May 27, for which we are indebted to J. G. Sullivan, M.Can.Soc.C.E., Chief Engineer, C.P.R. The figures show the number of feet.

	Jan. 28 to Feb. 25.	Feb. 25 to Apr. 1.	Apr. 1 to Apr. 29.	Apr. 29 to May 27.	Total to May 27.
Pioneer heading, east end .....	619	682	692	596	9,221
Main tunnel, east end .....	116	271	405	377	5,450
Main tunnel, east end .....	417	440	519	624	3,769
Pioneer heading, west end .....	687	710	516	652	7,270
Main heading, west end .....	606	857	707	575	6,081
Main tunnel, west end .....	176	479	542	593	2,165

## National Transcontinental Railway Operation.

Since the first announcement of the taking over by the Dominion Government of the National Transcontinental Railway, including the Grand Trunk Pacific Ry.'s Lake Superior branch, for operation in conjunction with the other Canadian Government Railways, there has been some temporary modification of the plans, consequent upon questions relating to what is known as the G.T.P.R. Lake Superior Division, which includes the N.T.R. from St. Boniface, Man., to Graham, Ont., 258.4 miles, and the G.T.P. R. branch from Graham to Fort William, 190 miles. Among the appointments announced in our last issue was that of R. S. Richardson as Superintendent of District 3, Armstrong to Winnipeg (excluding Armstrong) and Superior Jct. to Fort William. The question of the taking over of the Lake Superior branch, while authorized by the Government had not then been arranged, the matter of terms, whether lease or purchase, being under discussion. As also stated in our last issue the G.T.P.R. announced the appointment of A. Kilpatrick, as Superintendent of its Lake Superior Division, vice A. A. Tisdale, on temporary leave of absence. The question of jurisdiction over the Superior Jct.-St. Boniface section of the N.T.R. was thus raised, and the whole question was taken into consideration. As the result of negotiations it is said that a temporary arrangement has been made respecting the operation of the lines in question. The arrangement, it was reported June 11, is such that the G.T.P.R. will continue to operate the line from St. Boniface via Superior Jct. to Fort William, on behalf of the Dominion Government, pending the completion of the negotiations for the taking over of the Superior Jct.-Fort William line. The G.T.P.R. local staff will, it is said, be absorbed into the Canadian Government staff gradually, so that when terms are finally arranged the G.T.P.R. local staff will be non-existent. It is further stated that the Lake Superior branch will be taken over on the basis of a rental, the amount named approximately \$500,000 a year. The eastern terminus of the G.T.P.R. will, it is stated, be Transcona, Man., which terminal facilities will be used jointly with the N.T.R. F. P. Gutelius, General Manager, Canadian Government Railways, is reported to have stated, June 11, that it would be some time before the final arrangements were completed, and the agreement entered into, there being many details to be worked out. One of these is as to the rolling stock, it being said that G.T.P.R. rolling stock on the division is to be taken over. (June, pg. 210.)

## Grand Trunk Pacific Railway Construction.

The company started operating three through trains a week in each direction between Winnipeg and Prince Rupert, June 6. Heretofore there have only been two

trains a week from Edmonton to Prince Rupert, the Winnipeg-Edmonton service being conducted independently. The train for Prince Rupert leaves Winnipeg on Tuesdays, Fridays and Sundays at 6 p.m., while on the other days of the week it does not run further than Edmonton. The eastbound trains leave Prince Rupert, Tuesdays, Thursdays and Saturdays. A tri-weekly steamship service between Prince Rupert, Vancouver and Seattle, will be maintained in connection with the train service.

The question of the building of a transfer track between the G.T.P.R. and the C.P.R. at Calgary, Alta., came before the Board of Railway Commissioners there, June 9. The Board decided that the transfer track should be laid on land owned by the Globe Elevator, and that they should be put down by the G.T.P.R. The company, however, states that it is impossible to provide the money for this at present, but it is willing to pay a rental for its use if somebody else will build it. The Commissioners suggested that the city buy the land, build the track and collect the cost, spreading the payment over a term of years. The city does not appear to view the project with favor.

The importance of Prince Rupert as a trading centre is developing rapidly. Fishing is at present the most important industry from which the railway derives its traffic there. Until the advent of the G.T.P.R. the fishing steamboats carried most of their catch to Seattle, Wash., whence it was shipped east. During 1914, about 100 steamboats used Seattle as their landing port, and from that place some 40,000,000 lbs. of fish, principally halibut and herring, were shipped east. In Jan., 1914, the Dominion Government authorized the carriage of fish for the U.S. in bond through Canada, and the G.T.P.R. set out to obtain a share of the trade. Starting with the shipment of 60,000 lbs. in Sept., 1914, the shipments increased to 598,881 lbs. in March, 1915, 533,285 lbs. in April, by express, in addition to 789,240 lbs. in March and 740,000 lbs. in April by special train. Fourteen steamboats are now landing their catches at Prince Rupert, and the number is increasing. Special wharves are being built for the accommodation of the traffic. Five fish trains a week are being run from Prince Rupert to Chicago. The first car of copper ore for the smelter at Granby Bay, was reported to have reached Prince Rupert June 7, and a continually increasing tonnage of mineral traffic is looked for. It is stated that from 3,000 to 5,000 tons of ore for smelting will be carried at an early date.

The company's new hotel at Edmonton, Alberta, is completed and will be opened for business July 1. (June, pg. 224.)

## Inverness Railway and Coal Company's Finances.

Canadian Railway and Marine World for June contained some information about the meeting of I.R. & C. Co.'s bondholders called for June 30 to consider action to be taken in view of the company's inability to

meet the interest on its securities matured May 1. In connection with the notice calling the meeting the following circular was issued by the Secretary, L. W. Mitchell:

The conditions at present existing may be briefly summarized as follows: The company is capable of producing approximately 1,000 gross tons of coal per working day, but the cost of mining the coal, in view of the depth and extent of the workings, has reached a point where the margin between the cost of production and the price realized is very small. Under normal conditions the percentage of slack coal produced by the company is above the average, owing to the friable nature of the coal seams, and it has always been found difficult to market this without suffering heavy loss. Under present conditions, with the limited market, and that market calling for screened coal to a very large extent, the percentage of slack is naturally high, with the result that, owing to the company's inability to market its production of slack coal, it has been necessary from month to month to waste considerable tonnage. The quality of the coal has not shown the expected improvement in chemical analysis as the workings have been extended, nor has it become any less friable in formation. The revenue from the railway is largely dependent upon the coal shipments, inasmuch as the local business is small, and were the company's mines to close it is doubtful if the railway could be operated on a paying basis. The management are of the opinion that it can be operated with a prospect of paying interest on its outstanding securities only by the perfecting of a system of briquetting coal without the use of a binder in the shape of pitch, which will enable the company to make use of its slack coal. Such a method of briquetting slack coal is being carried out on the continent, and experiments on an extensive scale are being conducted in England with every prospect of success.

The holders of a large proportion of outstanding bonds have expressed their approval of an arrangement to waive default already existing in respect of the interest which matured May 1 and of several instalments of sinking fund, and to postpone the payment of interest and sinking fund for a period of years after the close of the war, and it is suggested that the meeting to be called should consent to such waiver and postponement. During such period an opportunity will be afforded to ascertain whether the proposed system of briquetting can be conducted successfully from the company's properties, and the meeting will be asked to adopt a plan to provide the necessary funds, by authorizing an issue of prior lien securities or otherwise.

## Locking Gear Ordered for Dampers of C.P.R. Locomotive Ash Pans.

The Board of Railway Commissioners passed the following general order, 145, May 31:—Re order 15988, Feb. 17, 1912, providing that all railway companies equip their locomotives with ash pans that can be dumped or emptied without the necessity of an employee getting under the locomotive, except in cases of emergency. Upon hearing the matter at Ottawa, April 6, 1915, in the presence of counsel for and representatives of the Canadian Pacific, Grand Trunk, and Canadian Northern Railways, the Brotherhood of Locomotive Engineers, and the Brotherhood of Locomotive Firemen and Enginemen; and upon reading the further submissions filed it is ordered that the C.P.R. be directed, by July 1, 1915, to equip its locomotives with a locking gear for the dampers of the ash pans: provided that no locomotive shall be operated from and after that date unless so equipped.



### Canadian Northern Railway Construction, Betterments, Etc.

**Canadian Northern Quebec Ry.**—The original route of the projected extension of the old Montford and Gatineau Colonization Ry. from Huberdeau, Que., was approved by the Minister of Railways, Sept. 30, 1912. The new location, which has just been approved, was found necessary for the betterment of grades and curvature. It proceeds along the east bank of the Rouge River to the Argenteuil county line, crossing to the west side of the river, and ties in with the originally approved route about six miles from Huberdeau. The route has been approved to near St. Remi d'Amherst.

**Canadian Northern Ontario Ry.**—The Hamilton City Council has been notified by the company of its objection to the construction of cement sidewalks on Palmerston Ave., between Gertrude St., and 550 ft. northerly, within the area through which the C.N.O.R. is located.

A start will be made early in July to finish up all the work on the line to Port Arthur, generally referred to as the Sudbury-Port Arthur line, but which actually covers the section of the line westerly from Ruel to Port Arthur. The principal work to be done consists of clearing out cuttings which have been affected by the winter weather, lining and surfacing. It is expected to have this work done by the middle of September.

**Canadian Northern Ry.**—The terms of the agreement between Port Arthur, Ont., and the company, which was defeated by the ratepayers at the January municipal elections is again under consideration. The company has offered a number of concessions, which are considered reasonable, and it is expected that a new agreement will be reached at an early date.

A press report states that arrangements are being made for an early start on the construction of the projected line from Bienfait to Esteven, Sask. Construction material was delivered at Bienfait, and Midale early in June, but up to June 12, nothing further had been done.

The Board of Railway Commissioners has authorized the opening for traffic of the line northwesterly from Battleford, from the present terminal at Edam, mileage 37, to Turtleford, mileage 57, Sask.

Construction is reported to have been resumed on the line from Oliver to St. Paul de Metis, Alta. D. F. McArthur took in a grading outfit, May 24, and at a meeting held at St. Paul, a few days previously the Minister of Municipal Affairs stated that on the representations of the Government Mr. McArthur had been given this contract. About 14 miles of grading had previously been done by him.

It is reported that 250 teams, with the necessary men, are grading south of High River, on the Calgary-MacLeod Line, Alberta. The section of the line between Calgary and DeWinton is also being graded. The Northern Construction Co. is the general contractor and the Wilson-Frederick Co. is reported to have a subcontract.

**Canadian Northern Pacific Ry.**—A Vancouver report, June 5, says that up to May 31 there had been deposited on the company's terminal site at False Creek, 1,500,000 cubic yards of material. Of this amount 400,000 yards had been pumped into the area enclosed by a bulkhead extending transversely down the creek since the reclamation operations were resumed in January. A 64-acre section of the company's holdings are barricaded, the entire tract being nearly 165 acres. It is estimated that it will take 3,250,000 yards of dirt to reclaim the whole of the property. The aspect of

the central portion of False Creek is being rapidly changed. At low tide an island of considerable size can be seen where formerly there were mud flats.

The Vancouver City Council decided, June 3, to take steps to compel the company to expedite work on the station and other buildings on the terminal site. (June, pg. 218).

### Grand Trunk Railway Betterments, Construction, Etc.

**Track Elevation in Montreal.**—The report of the City Engineering Department, respecting track elevation, referred to in our last issue, shows that the elevation of the tracks would affect 32 streets, as follows: Mountain, Aqueduct, Versailles, Lusignan, Guy, Richmond, St. Martin, Seigneurs, Chatham, Canning, Fulford, Dominion, Vinet, Atwater, Greene, Rose de Lima, Du Couvent, Place St. Henri, St. Philippe, Ste. Marguerite, Lacasse, DeCourcelles, St. Remi, Wellington, Hibernia, Charlevoix, D'Argenson, Atwater (aqueduct), St. Patrick, St. Ambroise, and Croissement. The cost of the work will be largely determined by the type of construction adopted. The city desires that tunnels with supporting columns in the centre of the roadway be adopted, while the city's engineering department favors overhead structures supported on columns, a system which has been found satisfactory in London, Eng., as well as in the United States. It is also claimed the column system would be more advantageous to the general street traffic. Working on this basis the estimated cost of the elevation would be: cost of work, \$2,635,045; general expenses, including engineers' fees, \$342,555; purchase of land, \$1,339,300; damages, \$500,000; total \$4,816,900. However, allowing for possible deviations from this general scheme by the adoption of some alternative plans at some of the streets, or by order of the Board of Railway Commissioners, the city's railway engineer, G. R. MacLeod, puts \$6,000,000, including interest at 5%, as the outside cost of the work. The G. T. R. estimate is \$8,000,000, which includes interest at 6%. (June, pg. 223.)

### Union Station for North Toronto.

Work has been started on the union station to be built at North Toronto for joint use by the C.P.R. and the Canadian Northern Ry. P. Lyall & Sons, Ltd., have the contract for the excavations, the only one let. Darling and Pearson, architects, Toronto, are preparing plans for the building, which are expected to be completed at a very early date, and plans of the track layout, etc., are being prepared under the direction of J. M. R. Fairbairn, Assistant Chief Engineer, C.P.R. An illustration made from a preliminary sketch of the building has been published in a Toronto daily paper, but that plan will be considerably changed. The station, 115 x 44 ft., will be built with its west end facing the east side of Yonge St., just south of the C.P.R.'s West Toronto-Leaside line on a

portion of which work has been in progress for over two years, the progress having been delayed materially by prolonged differences with the city. The building will face south, a central entrance leading into a general waiting room 50 x 69 ft. This waiting room will be flanked on the right by men's and women's rest rooms and lavatories, and on the left by telephone and telegraph booths and ticket office. A central exit from the waiting room will pass into a midway under the tracks, from which stairs will lead up to three platforms, serving the six tracks. The platforms will have umbrella sheds. There will also be a shelter 60 x 20 ft. on the station side of the track level.

On the Yonge St. side of the building there will be a clock tower, with an entrance way on the ground level leading into a concourse back of the main waiting room. The concourse will communicate with the midway, and it is through this routing that it is expected the majority of the passengers will pass, eliminating the waiting room. The baggage room will be located under the tracks to the east of the midway, and will be served by a driveway on the Yonge St. side, where the baggage will be delivered and received. The station will be built of cut stone, and will have a flat roof.

### Great Northern Railway Lines in Canada.

**Vancouver, Victoria and Eastern Ry. and Navigation Co.**—The Board of Railway Commissioners has authorized a connection with the C. P. R. near Granby Smelter, B. C.; and also with the Kettle Valley Ry., at Brookmere, B.C.

**Vancouver Terminals.**—The Board of Railway Commissioners, June 2, authorized a change in the location of the projected station building at False Creek, Vancouver, from the Prior St.-Park Lane section of the property, to next the property line of the Canadian Northern Pacific Ry., and directed that work is to be commenced at the expiration of six months from the date of the order, and completed by June 1, 1917.

Filling-in work on the False Creek flats is still being proceeded with, the City Engineer estimating that 800,000 cubic yards of material are still required on the company's property. The question whether the station to be built will be a union station with the Canadian Northern Pacific Ry., or an entirely separate building though adjacent thereto, is not yet decided. (June, pg. 225.)

**The Dominion of Canada Trust Corporation**, which is being wound up in London, Eng., attributes its failure among other things to the cancellation by the Dominion Parliament of the Halifax and Eastern Ry. charter. That company was chartered several years ago to build a railway from Dartmouth through the Musquodoboit River Valley, but despite liberal subsidies by the Dominion and by Nova Scotia, the company was unable to raise the necessary capital, and about three years ago the Dominion Government decided to build the line itself, hence the cancellation of the charter.



Railway Bridge Between St. Leonard, N.B., and Van Buren, Me.

This illustration shows the first passenger train crossing the bridge. A full description of the bridge appeared in *Canadian Railway and Marine World* for May 24, 1914, and its location, etc., were given in the June issue, pg. 205.



## Traffic Orders by the Board of Railway Commissioners.

### Switching Rates at Hamilton.

23681. May 14. Re complaint of Steel Co. of Canada Ltd., against the switching rates charged by Toronto, Hamilton & Buffalo Ry. in its Hamilton terminals, under Tariff C. R. C. 858, effective April 1, 1913, as amended by Supplement 4, effective May 5, 1913: Upon reading what is alleged in support of the complaint and on behalf of the railway company, and the report of the Chief Traffic Officer of the Board, it is ordered that the complaint be dismissed.

### Paper Rates to Central Freight Association Territory.

23708. May 20. Re complaint of Laurentide Co. Ltd., against rates charged by the railway companies on paper to Central Freight Association Territory, effective May 27, 1915, it is ordered that the following tariffs, C.R.C. no. E.2999 Canadian Pacific Ry.; C.R.C. no. E.3157 and C.R.C. no. P.115 Grand Trunk Ry.; C.R.C. no. E.641 Canadian Northern Ry.; C.R.C. no. 1103 Ottawa & New York Ry. be suspended until further order.

### Glengarry and Stormont Railway Tariff.

23709. May 19. Approving Glengarry Stormont Ry.'s Standard Freight Tariff, C. R. C. 1.

### Refund of Overcharge on Household Goods.

23781. May 28. Re complaint of C. M. Sinclair, of Bridgeburg, Ont., against rate charged by Windsor, Essex & Lake Shore Rapid Ry. on shipment of household effects from Kingsville to Bridgeburg. Upon reading what is alleged in support of the complaint and on behalf of the railway company; upon its appearing that the rate charged should have been 52c. per 100 lbs., and that the charge would have been \$3.12 instead of \$4.10; and upon the railway company consenting to abide by any decision arrived at by the Board, it is ordered that the company be authorized to refund to the complainant the difference in the said charges, viz., 98c.

### Freight on Mixed Carloads of Lumber and Shingles.

23813. June 2.—In the matter of the complaint of the Grain Growers' Lumber Co., of Vancouver, B.C., that, under note 2 of Supplement 45 to Tariff C.R.C. 1806, the C.P.R. exacts a higher weight basis on mixed carloads of lumber and shingles to points in Western Canada than to points in Eastern Canada under Tariff C.R.C. no. W. 1615, and Transcontinental Tariff C.R.C. 1790: Upon hearing the complaint, in the presence of counsel for the C.P.R., no one appearing for the complainant, although duly notified; upon reading the report of the Chief Traffic Officer of the Board, and hearing what was alleged, the board ordered that the complaint be dismissed.

### C.P.R. Release Form for Carriage of Perishable Freight.

23860. June 16.—The order 23392, Mar. 4, 1915, directing the C.P.R. to accept shipments of such perishable freight as beer, fruit and vegetables for carriage in heated cars, upon the shipper signing a "release" waiving all claim for damages by frost, as set forth in the order; and the application of the C.P.R. for approval of the draft of "release" submitted in conformity with the requirements of the said order: Upon reading the form of release submitted, and the report of the Chief Traffic Officer and the Law Clerk of the Board, it is ordered that the said form be approved.

### Moncton and Buctouche Ry. Freight Mileage Tariff.

23861. June 15.—The application of Moncton and Buctouche Ry., under Sec. 327 of

the Railway Act, for approval of its Standard Freight Mileage Tariff, C.R.C. no. 21: Upon the report and recommendation of the Chief Traffic Officer of the Board, it is ordered that the said tariff be approved.

## Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those for 1913-14, from July 1, 1914:

	Gross Earnings	Expenses	Net Earnings	Increase or Decrease
July	\$1,504,300	\$1,163,800	\$430,500	x \$83,800
Aug.	1,367,700	1,123,000	244,700	x 163,900
Sept.	2,100,900	1,519,000	580,700	65,800
Oct.	1,895,300	1,332,100	563,200	x440,900
Nov.	1,670,200	1,123,100	547,100	x417,700
Dec.	1,329,100	908,000	423,100	200,900
Jan.	950,800	773,000	177,800	x175,100
Feb.	1,105,100	823,700	281,400	42,800
Mar.	1,379,000	956,000	423,000	62,600
Apr.	1,429,000	940,000	489,000	74,800
	\$14,880,400	\$10,659,900	\$4,170,500	\$1,236,300

Decr. \$4,573,400 \$3,337,100 \$1,236,300  
x Decrease.

Approximate earnings for May, \$1,193,900 against \$1,641,600 for May, 1914, and for two weeks ended June 14, \$543,100 against \$736,900 for same period, 1914.

## Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1913-14, from July 1, 1914:

	Gross Earnings	Expenses	Net Earnings	Increase or Decrease
July	\$10,481,971.72	\$6,703,525.89	\$3,778,445.83	\$338,347.35
Aug.	8,917,764.33	6,554,606.68	3,373,157.70	597,981.54
Sept.	10,754,139.67	6,387,091.28	4,367,048.39	48,530.30
Oct.	9,282,928.49	5,361,600.13	3,921,328.36	2,281,529.43
Nov.	8,057,358.59	5,413,286.72	2,644,072.17	2,244,173.89
Dec.	7,443,962.43	5,244,438.62	2,199,523.81	2,027,297.90
Jan.	6,109,026.94	4,968,798.64	1,140,233.30	140,059.24
Feb.	6,735,678.49	4,756,663.87	1,879,014.62	507,438.16
Mar.	7,852,989.67	4,879,974.94	2,973,014.73	x126,224.14
Apr.	7,455,859.54	4,763,104.33	2,682,755.21	657,109.81

\$84,091,680.22 \$55,638,086.10 \$28,453,594.12 x \$7,673,696.96  
Dec. \$25,872,793.61 \$18,190,096.65 \$7,673,696.96  
x Decrease.

Approximate earnings for May, \$6,996,000 against \$9,533,000 for May, 1914, and for two weeks ended June 14, \$3,208,000, against \$4,329,000 for same period, 1914.

During the weeks ended May 31, June 7 and 14, the mileage was increased to 12,491, 12,633 and 12,748 respectively.

## Grand Trunk Railway Earnings, Etc.

The following figures show the earnings for the G.T.R. (including the Canada Atlantic Ry.), the G.T.W.R. and the D.G.H. & M.R. for March:

Grand Trunk Railway.			
Earnings	.....	\$3,200,300	
Expenses	.....	2,032,800	
Net earnings	.....	\$1,167,500	
Grand Trunk Western Railway.			
Earnings	.....	\$608,250	
Expenses	.....	590,500	
Net earnings	.....	\$17,750	
Detroit, Grand Haven and Milwaukee Ry.			
Earnings	.....	\$197,200	
Expenses	.....	205,000	
Deficit	.....	\$7,800	

Approximate earnings for May, \$4,015,302 against \$4,309,610 for May, 1914, and for two weeks ended June 14, \$1,908,290, against \$1,996,679 for same period, 1914.

### TRAFFIC RECEIPTS OF THE SYSTEM.

Aggregate from Jan. 1 to May 31:

	1915	1914	Incr.	Decr.
G.T.R.	\$14,971,617	\$16,633,441	.....	\$1,661,824
G.T.W.R.	2,850,844	2,847,518	\$3,326	.....
D.G.H. & M.R.	961,518	953,424	8,094	.....
Totals	\$18,783,979	\$20,434,383	.....	\$1,650,404

## Grand Trunk Pacific Railway Earnings.

The approximate earnings of the Prairie Section and Lake Superior Branch, 1,104 miles, for May, were \$274,541, against \$440,857 for May, 1914, and the aggregate from Jan. 1 to May 31, was \$1,431,697, against \$2,055,408 for same period 1914.

## Canadian Pacific Railway Construction, Betterments, Etc.

**Ontario Division.**—The Board of Railway Commissioners has ordered the C.P.R. to build a transfer track at Trenton, Ont., to connect with the Canadian Northern Ry.

Work was started, June 1, on the removal of old buildings and excavation on the site of the new station at North Toronto for the C.P.R., the Canadian Northern Ry. to have a joint right of use. The work is being done by the P. Lyall and Sons Construction Co., Montreal. The contract for the building has not been let.

**Kootenay Central Ry.**—The Board of Railway Commissioners has approved of revised location for half a-mile of this line from lot 3947 to lot 272 East Kootenay District, B.C.

**British Columbia Division.**—Reports from Vancouver, B.C., state that four tracks from the C.P.R. right of way to the new government wharf and elevator at the foot of Salisbury Drive, are to be laid at an early date. The matter is under consideration by the city council, with a view to securing proper protection for the public. (June, pg. 220.)

**Rogers Pass Tunnel.**—A system of ventilation is being worked out which will permit of the operation of this tunnel by steam power instead of by electricity as was at one time spoken of.

**Locomotive Boiler Inspection in Nova Scotia.**—The Nova Scotia Government has passed an order in council approving the regulations drawn up under the provisions of the amendment to the Provincial Railways Act passed last session, for the testing and inspecting of locomotive boilers used on railways subject to provincial jurisdiction. The regulations, which come into effect July 1, call for certified monthly inspections by the officer in charge of locomotives; quarterly inspection by the company's inspector, and an annual report by the inspector and the officer in charge of each locomotive. Specification cards for each locomotive are to be filed with the Government. The 38 regulations deal in detail with the manner of inspection.

**C.P.R. Manufacturing Munitions.**—A press report says:—"Linked with Sir Thomas Shaughnessy's conferences with the British officials in London are reports that the C. P.R. plants are being turned into a great munitions factory. The Angus locomotive and car shops of that company, at Montreal, are working 24 hours a day with a force of 12,000 men, and all the other C.P.R. plants and shops are preparing to begin this kind of work."

**Fire Guards on Prairie Railways.** The Board of Railway Commissioners' Chief Fire Inspector, Clyde Leavitt, has issued notice to the Canadian Pacific, Canadian Northern, Grand Trunk Pacific, Great Northern and Edmonton, Dnvegan & British Columbia Railways to establish and maintain fire guards on both sides of their right of way in Manitoba, Saskatchewan and Alberta, in accordance with the Railway Act, sec. 298, sub sec. 4, and general order 107, regulation 8.

**Telephone Train Dispatching on the G. T. Pacific Ry.** The system of dispatching trains by telephone has been installed throughout the G. T. P. R. main line. Portable telephones are carried on each train, keeping the train crews in touch with the dispatchers at all times and places. A regular system of watch inspection has also been put into force.

The Canadian Northern Ry. started a campaign, June 18, for the destruction of weeds along its lines in Saskatchewan. W. Kilby, Regina, is in charge.



# Mainly About Railway People.

**Sir Thomas Shaughnessy** sailed from Liverpool towards the end of June, for New York, after a business trip to England.

**Lieut. Hon. R. H. P. Howard**, who was killed in action at Ypres recently, was a grandson of the late Lord Strathcona.

**Lady Mackenzie**, wife of the President of the Canadian Northern Ry., has offered a house at Lakefield, Ont., as a convalescent home for soldiers.

**W. G. Cooper**, Road Foreman of Locomotives, Wabash, Rd., St. Thomas, Ont., died there, June 11, after an attack of typhoid fever.

**David McNicoll**, ex Vice President, C.P.R., who spent most of the winter in the south, is visiting his son on his ranch at Penticton, B.C.

**John G. Haslett**, who died at Winnipeg, June 17, aged 60, was, prior to 1905, for 14 years, Colonization Agent for the C.P.R. in London, Eng.

**Sir Thomas Tait**, President, Fredericton and Grand Lake Coal and Ry. Co., is spending the summer at St. Andrews, N.B., with Lady and Miss Tait.

**J. O. Apps**, General Baggage Agent, C.P.R., Montreal, was married at Westmount, Que., June 6, to Miss B. A. McAllen, and left for a trip to the Pacific coast.

**C. W. Fisher**, Chief Dispatcher, C.P.R., Lethbridge, Alta., attended the Train Dispatchers' Association of America's convention at Minneapolis, Minn., June 15.

**J. F. Chapman**, Manager, Thousand Islands Ry. and Oshawa Ry., Gananoque, Ont., has offered an island and cottage near Stave Island for wounded and sick soldiers.

**Sir Wm. Van Horne** returned from Cuba to Montreal recently, and with Lady and Miss Van Horne will spend most of the summer at Covenhoven, St. Andrews, N.B.

**Huntley Drummond**, a son of the late Sir George Drummond, director, C.P.R., has given \$100,000 to the Dominion Government to purchase machine guns for Canadian overseas troops.

**C. A. Cotterell**, Superintendent, District 2, British Columbia Division, C. P. R., Vancouver, was called to Fort William, Ont., early in June, on account of the death of his father.

**B. B. Kelliher**, who was, until recently, Chief Engineer, Grand Trunk Pacific Ry., Winnipeg, was married in London, England, early in June, to Miss C. O'Connor of Wexford, Ireland.

**J. H. Fulford**, who died at Brockville, Ont., June 8, was a former mayor of the city, and for a considerable period acted as city agent there for several steamboat and railway lines.

**W. Marshall**, Assistant Manager of Telegraphs, Western Lines, C. P. R., Winnipeg, was operated on for appendicitis, June 3, and is reported to be progressing satisfactorily.

**J. W. Stewart**, President, Pacific Great Eastern Ry., Vancouver, has contributed \$450 to the 47th Highlanders for the equipment of a pipe band of eight pipers and four drummers.

**Miss Margaret Armstrong**, daughter of L. O. Armstrong, of the Natural Resources Department, C.P.R., was married at Montreal recently to C. B. Amory, of Boston, a lieutenant in the U.S. army.

**C. C. Carr**, son of C. E. A. Carr, Railway Supplies, Toronto, who went to Europe with the first contingent, and was reported missing after the battle of Langemarck, has been

located in a German hospital, where he is reported to be recovering from wounds.

**F. N. McCrea**, M. P. for Sherbrooke, Que., formerly President, Lotbiniere & Megantic Ry., has been unanimously selected as the Liberal candidate for that constituency at the next general election.

**Thomas Cantley**, Vice President, Nova Scotia Steel and Coal Co., and Eastern Car Co., New Glasgow, N.S., has been elected First Vice President, Canadian Manufacturers Association, for the current year.

**F. L. Wanklyn**, General Executive Assistant, C. P. R., Montreal, who is honorary colonel of the Canadian Overseas Railway Construction Corps, entertained the officers to dinner at St. John, N. B., June 5.

**W. S. Ousman**, formerly of the Canadian Freight Association's Montreal office, has enlisted for overseas service with the 38th Battalion, Canadian Expeditionary Force, and is now at Barriefield Camp, Ont.



**R. S. Richardson**, Superintendent, District Three, National Transcontinental Railway.

**David Lyall**, who was Chief Engineer and Manager for C. J. Wills and Sons of London, Eng., during their contract on the Central Railway of Canada, a year or two ago, is now with the Royal Engineers in France.

**Mrs. E. W. Rathbun**, wife of the President, Oshawa Ry., who has gone to Europe with the Canadian overseas Expeditionary Forces, has offered their home at Deseronto, Ont., as a convalescent home for wounded and sick soldiers.

**James Dunsmuir, Jr.**, who lost his life through the torpedoing of the s.s. Lusitania by the enemy recently, was the third son of James Dunsmuir, director, C.P.R., and a former Lieutenant Governor of British Columbia.

**G. H. Stott**, City Passenger and Ticket Agent, G.T.R., Quebec, has received word that his son, Percy Stott, a member of the 8th Battalion, was taken prisoner by the Germans, after one of the engagements at Ypres, Belgium.

**Capt. A. T. Shaughnessy**, who is serving with the 60th Battalion, now recruiting for active service in Europe, is a son of Sir Thomas Shaughnessy, President, C.P.R.,

and a member of the Montreal Stock Exchange, as partner of C. Meredith and Co.

**Mrs. G. McLaren Brown**, wife of the European Manager, C.P.R., London, Eng., has received a letter by the Queen's command, asking her to convey to the ladies of the Canadian War Contingent Association, thanks and appreciation for clothing, etc., contributed.

**W. W. Butler**, Vice President, Canadian Car and Foundry Co., returned to Montreal at the end of June after having been in Europe for several months, a considerable portion of his time having been spent in Petrograd, where he secured large orders for shells.

**Rev. J. Gilbert Baylis**, D.D., Canon of Christ Church Cathedral, Montreal, who died there, June 21, aged 76, came to Canada about 60 years ago, entered G.T.R. service soon after his arrival, and spent several years in it prior to entering college to study for holy orders.

**H. R. Bullen**, who has been Soliciting Freight Agent, G.T. Pacific Ry., Regina, Sask., was made the recipient of a present by the local staffs there recently on his transfer to San Francisco, Cal., as Soliciting Freight and Passenger Agent, G.T.R. and G.T. Pacific Ry.

**Lieutenant W. E. B. Schreiber**, who was reported recently to have been killed in active service in France, was well known in Quebec, where he had lived for six years since coming from England. He was for some time engaged on survey work on the National Transcontinental Ry.

**J. K. L. Ross**, director, C.P.R., is reported to have purchased the steam yacht Winchester in New York. She was built at Glasgow, Scotland, in 1913, and is 405 ft. long, with a draught of 6 ft., and is screw driven, burning oil. She is said to be capable of a speed of 30 knots.

**H. D. Leach**, whose body was found in the lake near Whitby, Ont., June 8, was formerly in the Canadian Freight Association's service at Toronto as an inspector. He had not been in that service for several months, and was undergoing treatment for mental trouble.

**J. H. Kennedy**, M. Can. Soc. C. E., Assistant Chief Engineer, Vancouver, Victoria and Eastern Ry. and Navigation Co., Vancouver, B. C., has resigned after 14 years with the company, which is a subsidiary of the Great Northern Ry. He has been connected with the Canadian Society of Civil Engineers since 1887.

**Lieut. R. Falshaw Morkill**, Signal Engineer, G.T.R., Montreal, who went to Europe with the first Canadian Overseas Expeditionary Force, has been promoted to a captaincy in the Royal Engineers, and has been mentioned for the military cross in connection with engineering work done at the Ypres Canal.

**C. F. Dibblee**, who died at Woodstock, Ont., June 1, aged 75, was a well known railway engineer and contractor, having carried out several contracts on the National Transcontinental Ry. He was father of H. B. Dibblee, A.M. Can. Soc. C.E., formerly Superintendent, National Transcontinental Ry., Edmundston, N.B.

**Lieut. H. F. H. Hertzberg**, son of A. L. Hertzberg, M. Can. Soc. C.E., Division Engineer, Ontario Division, C.P.R., Toronto, who was wounded at Langemarck, as mentioned in our last issue, and who had been treated in one of the hospitals in England, was struck by a motor truck in London, Eng., during June, and sustained some painful



but not serious injuries. He has received the military cross for his work at the front.

**D. A. Thomas**, who has been appointed to continue the manufacture of munitions in Canada and the United States on behalf of the British Government, is President of the Pacific, Peace River and Athabasca Ry., and the Peace River Tramway and Navigation Co., which have charters for the building of certain railways in the Peace River district of Alberta.

**J. F. Richardson**, who resigned his position as Superintendent of Telegraphs, Saskatchewan Division, C.P.R., Moose Jaw, recently, did not leave for Montreal as stated in our June issue. After nearly 32 years of service with the C.P.R. Telegraph Department from coast to coast he will take a rest for the summer with his parents at Lanigan, Sask., before taking up other work.

**Angus Sinclair**, railway contractor, Toronto, has gone to England, where his son, Lieut. Ian M. R. Sinclair, who went through the battle of Langemarck safely, but was wounded in the left leg with shrapnel in the Orchard battle subsequently, is convalescing. Lieut. Sinclair was in the 48th Highlanders, Toronto, but was transferred to the 5th Royal Highlanders of Montreal. Mrs. Angus Sinclair and Miss Dorothy Sinclair have also gone to England.

**James Russell**, who has been appointed General Manager, Denver and Rio Grande Rd., Denver, Col., was from 1879 to 1882 in G.T.R. service as agent and operator at various points, and from 1883 to 1887, operator and dispatcher, Canada Southern Ry. and Michigan Central Rd., and from 1887 to 1903, dispatcher, Chief Dispatcher and Superintendent, consecutively, St. Paul, Minneapolis and Manitoba Ry., and Great Northern Ry.

**A. D. MacTier**, General Manager, Eastern Lines, C.P.R., Montreal, received word, June 20, of the death of his father, at St. Andrews, Scotland, June 19, aged 93. The late Mr. MacTier was formerly Surgeon-General in the British Army at Bengal, India, and served through several Indian campaigns. Major H. M. MacTier, of the 2nd Battalion, 39th Garwhal Rifles, one of the Indian regiments now fighting in Europe, who was killed in action in March, was a brother of A. D. MacTier.

**Colin D. MacKintosh**, who has been appointed Superintendent, District 1, Alberta Division, C.P.R., Medicine Hat, was born at Auckland, New Zealand, Sept. 24, 1882, and entered C.P.R. service, Sept., 1905, since when he has been, to 1906 in junior positions in the Engineering Department; 1906 to 1909, transit man on location survey; 1909 to 1910, Resident Engineer; 1910 to 1911, Locating Engineer; 1911 to 1913, Assistant Engineer on Construction; 1913 to June, 1915, Division Engineer.

**J. R. Bruce**, ex Traffic Auditor, Intercolonial Ry., Moncton, N.B., died at his home at Shediac Cape, N.B., June 21, following an attack of influenza. He was born at Portsoy, Scotland, Sept. 23, 1848, and came to Canada at the age of 21. He entered I.R.C. service in 1873 as clerk in the General Manager's office, and was later transferred to the Paymaster's office, and in 1876 became chief clerk to the General Manager. He was appointed Traffic Auditor in 1883, and was superannuated in 1909.

**J. McMillan**, who was appointed Manager, C.P.R. Telegraphs, Montreal, recently, was presented at Winnipeg, May 31, with an illuminated map, by members of the Western Associated Press, Ltd., showing the wire mileage of the newspaper territory served by it, with the names of the papers concerned. Prior to his promotion to Montreal, Mr. McMillan had been General Superintendent, Western Lines, C.P.R. Telegraphs, at Winnipeg, for several years.

**Leon Spoor Landers**, who has been appointed Resident Engineer, District 4, Intercolonial Ry., Truro, N.S., was born at Farnham, Que., Dec. 15, 1888, and entered railway service in May, 1910, since when he has been, to Feb., 1911, rod man, C.P.R., Farnham, Que.; Feb., 1911, to Mar., 1912, draughtsman, Resident Engineer's office, Eastern Division, C.P.R., Montreal; Mar., 1912, to Oct., 1913, transit man, C.P.R.; Oct., 1913, to May, 1915, transit man, District 4, Intercolonial Ry., New Glasgow, N.S.

**George Geoffrey Grundy**, General Manager, Temiscouata Ry., who died of heart disease, at Riviere du Loup, Que., June 9, was born at Brecon, Wales, June 12, 1877, and entered railway service in Oct., 1893, since when he has been in the Engineering Department, Quebec Central Ry., Sherbrooke, Que.; on construction of Western Lines, C.P.R., and from 1897 to Oct. 1, 1909, Superintendent, Temiscouata Ry., Riviere du Loup, Que.; and from Oct. 1, 1909, until his death, Secretary and General Manager, same road.



A. H. Kendall,  
Assistant Works Manager, Angus Locomotive  
Shops, Canadian Pacific Railway.

**W. C. Sealy**, whose appointment as Master Mechanic, Ontario Lines, G.T.R., Toronto, was announced in our last issue, was educated at Stratford, Ont., and entered G.T.R. service there as an apprentice in 1901, when the company had just inaugurated its apprenticeship educational system. He remained at Stratford for 7½ years, as apprentice, charge hand and General Foreman of the shop, after which he was appointed General Foreman at Toronto, and in 1913 Assistant Master Mechanic, Ontario Lines, which position he retained until his present appointment.

**Albert Henry Kendall**, who has been appointed Assistant Works Manager, Locomotive Department, Angus Shops, C. P. R., Montreal, was born at Aspatria, Cumberland, England, Apr. 4, 1878, and entered railway service in June 1901, since when he has been, to Jan. 1904, Locomotive Foreman, C. P. R., Nakusp and Revelstoke, B. C.; Jan. to Nov. 1904, Locomotive Foreman, G. T. R., London, Ont.; Nov. 1906 to July 1913, gang foreman, erecting shop foreman and General

Foreman, Angus Shops, C. P. R., Montreal; July to Dec. 1913, Locomotive Inspector, C. P. R., Kingston, Ont.; Dec. 1913 to Apr. 1915, General Foreman, C. P. R., North Bay, Ont.

**W. A. Fitch**, who has been appointed Assistant Superintendent, Intercolonial Ry., Moncton, N.B., was born at Kentville, N.S., Nov. 25, 1867, and entered I.R.C. service, Oct., 1880, since when he has been, to Jan., 1882, telegraph operator at Folley, N.S.; Jan., 1882, to Apr., 1883, telegraph operator at Maccan, N.S., Sackville, N.B., and St. John, N.B.; Apr., 1883, to July, 1885, agent at Folley, N.S.; July, 1885, to Aug. 25, 1886, dispatcher's operator at Truro, N.S.; Aug. 25, 1886, to Mar. 30, 1903, dispatcher at Truro, N.S., Campbellton, N.B., Moncton, N.B., and Truro, N.S.; Mar. 30, 1903, to June 1, 1912, Chief Dispatcher at Sydney, N.S.; June 1, 1912, to May 23, 1915, Assistant Superintendent, Sydney, N.S.

**Mathew Kelly**, who has been appointed Resident Engineer, District 4, Ontario Division, C. P. R., Toronto, was born at Thamesville, Ont., July 6, 1874, and entered railway service, Aug. 1900, since when he has been, to Apr. 1902, bridge man, G. T. R., London, Ont.; May 1902 to Apr. 1905, bridge man, C. P. R., London, Ont.; May to July 1905, chain man, C. P. R., London, Ont.; Aug. 1905 to Mar. 1906, rodman, C. P. R., London, Ont.; Apr. 1906 to Apr. 1910, transit man, C. P. R., London, Ont.; May 1910 to Apr. 1911, Resident Engineer, C. P. R., Toronto; May 1911 to May 1913, Resident Engineer, C. P. R., White River, Ont.; June 1913 to June 1915, Resident Engineer, C. P. R., Brownville Jct., Me.

**John N. Beckley**, President, Toronto, Hamilton and Buffalo Ry., who has also assumed the position of General Manager, was born at Clarendon, N. Y., Dec. 30, 1848, was educated at Genesee Wesleyan Seminary and Genesee College, and was admitted to the bar in New York in June 1875. He removed to Rochester, N. Y., in May 1877, and was City Attorney there from 1884 to 1888. From 1890 to 1891 he was Secretary, Rochester Ry.; 1891 to 1892, Vice President, and 1892 to 1900, President, Rochester Ry. Co., and also from 1891 to 1896, President, Taunton St. Ry. Co., Taunton, Mass., President, Globe St. Ry. Co., Fall River, Mass., and President, Lawrence St. Ry. Co., Lawrence, Mass. He was elected President, Toronto Hamilton and Buffalo Ry. in 1895.

**Archibald McTavish**, who has been appointed Locomotive Foreman, G. T. Pacific Ry., Biggar, Sask., was born at Palmyra, Ont., May 19, 1875, and entered railway service, Apr. 1896, since when he has been, to Aug. 1898, fireman, Niagara, St. Catharines and Toronto Ry., St. Catharines, Ont.; Aug. 1898 to Aug. 1902, not in railway service; Sept. 1902 to Oct. 1903, fireman, C. P. R., Brandon, Man.; Oct. 1903 to May 1908, locomotive driver, C. P. R., Brandon, Man.; May 1908 to Nov. 1910, locomotive driver, G. T. Pacific Ry., Melville, Sask.; Nov. 1910 to Nov. 1911, Road Foreman of Locomotives, same road, Melville, Sask.; Nov. 1911 to Sept. 1913, Locomotive Foreman, same road, Melville, Sask.; Sept. 1913 to Feb. 1915, locomotive driver, same road, Melville, Sask.; Feb. to May 1915, Locomotive Inspector, same road, Transcona, Man.

**Oliver Charles Bishop**, whose appointment as Superintendent, Sleeping, Dining Cars and News Service, Canadian Northern Ry., Winnipeg, was announced in our last issue, was born at Escanaba, Mich., Dec. 10, 1876, and entered railway service Sept., 1893, since when he has been, to Apr., 1895, waiter and pantryman, Minneapolis, St. Paul and Sault Ste. Marie Ry., Manistiquie, Mich.; May, 1895, to May, 1900, waiter, C.P.R., Montreal and Winnipeg; May, 1900, to May, 1903, conductor of dining car, C.P.R.,



Montreal and Winnipeg; June, 1903, to Nov., 1904, waiter on dining car, Canadian Northern Ry., Winnipeg; Nov., 1904, to June, 1909, dining car conductor, C.N.R., Winnipeg; June, 1909, to Sept., 1910, dining car inspector, C.N.R., Winnipeg; Sept., 1910, to May, 1915, Assistant Superintendent of Sleeping and Dining Cars and News Service, C.N.R., Winnipeg.

**Hon. Samuel Barker, M.P.**, who died suddenly at Hamilton, Ont., June 26, was born at Kingston, Ont., May 25, 1839. He practised as a lawyer in London, Ont., for many years, and was, at one time mayor of that city. He was Solicitor and General Counsel of the Great Western Ry. of Canada from 1872 to 1882, and General Manager, Northern and Northwestern Ry., Toronto, from 1883 to 1888, both railways now forming part of the G.T.R. He was President of the St. Louis, Kansas and South Western Ry. in 1899, and was also President of Muskoka and Georgian Bay Navigation Co. at one time. He acted as an arbitrator between the Toronto St. Ry. Co. and the City of Toronto in 1890.

**Sir John S. Hendrie**, who was created a Knight Commander of the Order of St. Michael and St. George, on the King's birthday, is Lieutenant-Governor of Ontario, and was for some years Chairman of the Railway Committee of the Ontario Legislature, in the government of which Province he was a minister without portfolio. He is a son of the late Wm. Hendrie, with whom he was associated in his early days as a railway contractor, building several railways in Canada and the United States. He has also been a director of the Northern Navigation Co. and the Niagara Navigation Co. He has been connected with military affairs since 1883, and holds the rank of lieutenant-colonel in the Canadian Artillery. He commanded the Canadian Artillery at the Queen Victoria diamond jubilee celebrations in London, Eng., in 1897, and was then created a Companion of the Victorian Order.

**Frederick Fanning Backus**, who has been appointed Assistant to the President, Toronto, Hamilton and Buffalo Rv., Hamilton, Ont., was born at Rochester, N.Y., June 4, 1860, and entered transportation service, June 4, 1876, since when he has been, to 1887, with Merchants Despatch Transportation Co.; 1877 to 1881, clerk, Local Freight Office, New York Central and Hudson River Rd.; 1881 to 1883, chief clerk to General Northwestern Agent, Lehigh Valley Rd., Rochester, N.Y.; 1883 to 1885, Travelling Freight Agent, same road, Buffalo, N.Y.; 1885 to Oct., 1886, Assistant Claim Clerk, General Office, Blue Line (New York Central Fast Freight Line), Rochester, N.Y.; Oct., 1886, to Apr. 7, 1887, Assistant to General Agent, same line, Toronto; Apr. 7, 1887, to Dec., 1897, General Agent, same line and Canada Southern Ry., Toronto; Dec. 1, 1897, to July 1, 1912, General Freight and Passenger Agent, Toronto, Hamilton and Buffalo Rv., Hamilton, Ont.; July 1, 1912, to June 11, 1915, General Traffic Manager, same road, Hamilton, Ont.

**S. W. Foster**, who died at Knowlton, Que., May 31, after a short illness, was born in 1827, and was chiefly known as a railway organizer. He took an active part in securing the construction of the Stanstead, Shefford and Chambly Rv., and later, in association with his brother, was connected with the promotion and construction of the South Eastern Rv. He also obtained a charter for the Montreal and Champlain Jct. Ry. for a branch from the Victoria Bridge to the International boundary, and later was actively connected with the G.T.R. At various times he was director, Montreal and Champlain Jct. Rv., President and Managing Director, Orford Mountain Ry.,

and President, United States and Canada Ry. He was admitted to the bar in 1854, and acted as a judge of the sessions for Bedford, Que., from 1869 to 1877. The funeral, which took place at Knowlton, June 2, was attended by a number of representatives of various transportation interests in Montreal, etc.

**Reuben S. Richardson**, who has been appointed Superintendent, District 3, National Transcontinental Ry., Winnipeg, was born at Napanee, Ont., Apr. 9, 1865, and entered transportation service in 1878, since when, to 1884, he filled various positions from messenger to freight clerk, operator, ticket clerk, switchman and baggage master, Canadian Express Co. and G.T.R., at various points; 1884 to 1887, brakeman, conductor, station agent and Soliciting Freight and Passenger Agent, Bay of Quinte Ry., at various points; 1897 to 1901, brakeman, conductor and Terminal Yardmaster, Canada Atlantic Ry., Ottawa; 1901 to 1907, General Yardmaster and acting Trainmaster, C.P.R., Smith's Falls and North Bay, Ont.; 1907 to 1911, Assistant Superintendent, Canadian Northern Ry., Montreal, Quebec and Ottawa; 1911 to 1913, Superintendent of Operating and Construction, MacDonnell and O'Brien, contractors on the National Transcontinental Ry., La Tuque, Que.; 1913 to May 1915, General Yardmaster of Terminals and Assistant Superintendent, Intercolonial Ry., Halifax, N.S., Moncton and St. John, N.B.

**Sir Henry Lumley Drayton**, who was created a knight bachelor on the King's birthday, was born at Kingston, Ont., Apr. 27, 1869, and educated in England and Canada, commencing his legal career in 1886 as a law student at Toronto. He was admitted to the Ontario bar in 1891 and commenced practice in Toronto, being appointed Assistant City Solicitor in 1895, resigning in Sept. 1900 to re-engage in private practice. On Jan. 29, 1904, he was appointed Crown Attorney for the county of York, Ont., and resigned in Nov. 1909 to resume private practice. He was appointed a K.C., Jan. 20, 1908, and on Apr. 25, 1910, was appointed counsel for the City of Toronto, and subsequently was one of Toronto's representatives on the Ontario Hydro Electric Power Commission. In July 1912 he was appointed Chief Railway Commissioner, following the death of J. P. Mabey. On the outbreak of war he was in London, Eng., and under the acting High Commissioner rendered good service in connection with the aiding of Canadians who were stranded at various points on the continent on account of the war.

**William A. Cowan, A.M.Can.Soc.C.E.**, who has been appointed Division Engineer, National Transcontinental Ry., Cochrane, Ont., was born at Galt, Ont., Jan. 22, 1877, and commenced railway service July 23, 1899, as bridge carpenter, C.P.R., London, Ont., where he remained until Sept. 25, 1901. He graduated from the School of Practical Science, Toronto, Apr. 30, 1904, and from May 1, 1904 to Feb. 1, 1905, was transit man, C.P.R., London and Toronto; Feb. 1 to Oct. 15, 1905, Assistant Engineer of Terminals, C.P.R., Toronto; Apr. 15, 1905 to Feb. 14, 1908, Resident Engineer, District 3, Ontario Division, C.P.R., Toronto; Feb. 19, 1908 to Nov. 1, 1909, Resident Engineer, District 2, Ontario Division, C.P.R., London, Ont.; Nov. 1, 1909 to Oct. 1, 1911, Resident Engineer, District 1, Eastern Division, C.P.R., Farnham, Que.; Oct. 1, 1911 to Nov. 1, 1912, Assistant Engineer, C.P.R., Montreal; Nov. 1, 1912 to Jan. 9, 1914, Superintendent, District 1, Atlantic Division, C.P.R., Brownville Jct., Me.; Jan. 10 to Mar. 15, 1914, Engineer of Construction, Halifax Ocean Terminals, Intercolonial Ry., Halifax, N.S.; Mar. 15, 1914 to May 1, 1915, Resident

Engineer, District 3, Intercolonial Ry., Truro, N.S.

**Sir Percy Girouard**, who has been appointed the chief organizer of the new Department of Munitions in England was engaged from 1886 to 1888 on construction work on the C.P.R. He subsequently entered the Royal Engineers as 2nd Lieutenant and became Traffic Manager of the Royal Arsenal railways, Woolwich, England. He was appointed to attend the International Railway Congress in 1895, and was the author of a paper in 1891 on engineering, wherein he outlined a plan for the protection of the coast of England. In 1896 he became a member of the Dongola Expedition under Major General Sir Herbert Kitchener, now Earl Kitchener, as Director of Railways, and was in charge of the railway battalion during the campaign, with the rank of Bimbashi, or Major, in the Egyptian Army. He was also associated with Sir Herbert Kitchener in the last Boer war, his work relating mainly to railways, and was subsequently appointed Governor of Nigeria, West Africa, chiefly with the view of developing the Government railway system there. On the completion of his term in that position he became Vice President, Armstrong, Whitworth and Co., which position he resigned at the commencement of the war, on receiving an appointment in connection with the supply of munitions, under the War Office.

**John Murray Cameron**, who has been appointed General Superintendent, Alberta Division, C.P.R., Calgary, was born at Lochabar, N.S., Dec. 18, 1867, and entered railway service, July 1883, since when he has been, to Dec. 1883, laborer, C.P.R., Moose Jaw, Sask.; Dec. 1883, to Apr. 1884, wiper, C.P.R., Moose Jaw, Sask.; Apr. 1884 to Apr. 1885, bridge and building laborer, Western Division, C.P.R.; Apr. 1885 to Feb. 1886, pump man, Western Division, C.P.R.; Feb. 1886, to Oct. 1888, brakeman and train baggage man, C.P.R., Medicine Hat, Alta.; Nov. 1888 to June 1889, brakeman and conductor, Northern Pacific Ry., Tacoma, Wash.; June 1889 to Dec. 1890, brakeman and conductor, Oregon and Washington Territory Rd., Walla Walla, Wash.; Dec. 1890 to July 1892, conductor, Columbia and Puget Sound Rd., Seattle, Wash.; July 1892 to June 1893, brakeman and conductor on construction, Great Northern Ry., Seattle and Spokane, Wash.; June 1893 to Oct. 1895, conductor, G.N.R., Great Falls, Mont.; Oct. 1895 to Sept., 1899, conductor, Kaslo and Slocan Ry. (G.N.R.), Kaslo, B.C.; Sept., 1899 to May 1900, conductor and construction trainmaster, G.N.R., Bonners Ferry, Idaho; May 1900 to Aug. 1907, brakeman and conductor, C.P.R., Nelson, B.C.; Aug. 1907 to Oct. 1909, Trainmaster, C.P.R., Nelson, B.C.; Oct. 1909 to June 1910, Trainmaster, C.P.R., Vancouver, B.C.; June to Dec. 1910, Superintendent, C.P.R., Moose Jaw, Sask.; Jan. 1911 to Dec. 1914, Superintendent, C.P.R., Medicine Hat, Alta.; Jan. to June, 1915, Assistant General Superintendent, British Columbia Division, C.P.R., Vancouver.

**Wood Borers in Halifax Harbor**—In excavating for the new pier 2 of the Intercolonial Ry. at Halifax, N.S., a number of old pine stumps were found. They were the remains of piles which had been eaten through by limnoria below low water level. It was found that uncreosoted timber was eaten from extreme low water down to the mud level even when that was 30 ft. below. Several creosoted hard pine piles that had been in the water about 4 years were found to have been attacked to a depth of about 1/2 in. No signs of the teredo were found; apparently, all of the boring in this harbor is confined to limnoria.



## Railway Rolling Stock Notes.

The C.P.R., between Apr. 15 and June 15, received 1 steel mail car and 1 class D1 passenger car from its Angus shops, Montreal.

The National Steel Car Co., according to a 11-month report, has secured an order for 1,300 freight cars for the North Atlantic of France.

The Grand Trunk Pacific Ry. has received 34 express refrigerator cars, nos. 6013 to 6046, from Canadian Car and Foundry Co., making 47 delivered out of an order for 50.

The Russian Government has ordered 100 decapod (2-10-0) superheater locomotives, 5 ft. gauge, and of approximately 197,000 lbs. each, from American Locomotive Co., Schenectady, N.Y.

The Eastern Car Co., which has received an order for 2,000 box cars from the Russian Government, is reported to have received a large order for freight cars from the French Government.

The Intercolonial Ry. has received 15 box cars, 80,000 lbs. capacity, from Nova Scotia Car Works; 94 all steel general service cars, 100,000 lbs. capacity, from Eastern Car Co., and 2 switching locomotives from Canadian Allis Chalmers Ltd.

Aemilius Jarvis, President, Canadian Locomotive Co., Kingston, Ont., on his return from Europe recently announced that the Russian Government had given the company an order for 50 decapod (2-10-0) locomotives, at an approximate cost of \$1,250,000.

The Edmonton, Dunvegan & British Columbia Ry. has been ordered by the Board of Railway Commissioners to remove its locomotive no. 3 from service until it is put in a proper condition for safe operation to the satisfaction of one of the board's inspectors.

The Canadian Government Railways have ordered 650 box cars, 40 tons capacity, from Canadian Car and Foundry Co.; 350 box cars, 40 tons capacity, from National Steel Car Co., and 15 consolidation locomotives from the Canadian Locomotive Co. It is expected that these will be used principally on the National Transcontinental Ry.

In addition to the order from the Russian Government, to the Canadian Locomotive Co., for 50 locomotives, it is reported that the same government has ordered 250 locomotives from the Baldwin Locomotive Works, and 100 locomotives from the American Locomotive Co., while it is also stated that the Belgian Government has ordered 20 locomotives from the American Locomotive Co.

With reference to the orders for rolling stock placed by the Russian Government, it is stated that negotiations are still proceeding for such orders aggregating 22,000 cars. A small portion of the order has been placed, viz., that with the Eastern Car Co., for 2,000 cars, which we have already mentioned, but it is stated that no other contracts have actually been made for the balance owing to a difficulty regarding financing.

Press reports stated recently that Hon. F. Cochrane, Minister of Railways, and F. P. Gutelius, General Manager, Canadian Government Railways, were visiting the U.S. for the purpose of buying rolling stock to be used in connection with the Government operation of the National Transcontinental Ry. and the Grand Trunk Pacific Ry. Lake Superior Branch. Enquiry on our part elicits the information that the report was unfounded. As mentioned on this page, orders have been placed in Canada for 15 locomotives and 1,000 box cars.

Canadian Government Railways have ordered 650 box cars, 40 tons capacity, from Canadian Car and Foundry Co., 500 of which will be built at the Dominion and Turcot shops, Montreal, and 150 at the Amherst, N.S., shops. Delivery is required by Sept. 1. Following are some of the details:

Extreme width ..... 9 ft. 3½ ins.  
Width inside ..... 8 ft. 6½ ins.  
Length inside ..... 36 ft.  
Width of door opening ..... 5 ft.  
Height of door opening ..... 7 ft. 8 7-16 ins.  
Distance centre to centre of trucks, 26 ft. 10 ins.  
Height top of rail to top of brake mast ..... 13 ft. 10 ins.  
Height top of rail to top of floor ..... 4 ft. 0¼ ins.

The Alberta and Great Waterways Ry. has received one 10 wheel passenger locomotive equipped with superheater, from Canadian Locomotive Co. Following are the chief details,—

Weight on drivers ..... 102,000 lbs.  
Weight, total ..... 125,000 lbs.  
Wheel base, rigid ..... 11 ft. 10 ins.  
Wheel base, total engine ..... 21 ft. 7 ins.  
Wheel base, engine and tender ..... 49 ft. 4¼ ins.  
Heating surface, firebox ..... 123.5 sq. ft.  
Heating surface, tubes ..... 1,047.5 sq. ft.  
Heating surface, arch tubes ..... 15 sq. ft.  
Heating surface, total ..... 1,186 sq. ft.  
Driving wheels, diar. .... 63 ins.  
Driving wheel centres ..... Cast iron  
Driving journals, diar. and length. 8½ by 10 ins.  
Cylinders, diar. and stroke ..... 19 x 26 ins.  
Boiler, type ..... Radial stay  
Boiler pressure ..... 180 lbs.  
Tubes, no. and diar. .... 122, 2 ins.; 18, 5½ ins.  
Tubes, length ..... 11 ft. 10 ins.  
Injectors ..... Locomotive type  
Safety valves ..... 2, 3 in. locomotive pop.  
Brakes ..... Westinghouse American  
Packing ..... Metallic  
Superheater ..... Schmidt type A  
Weight of tender loaded ..... 116,500 lbs.  
Tank, type ..... U type  
Water capacity ..... 5,000 imp. gals.  
Coal capacity ..... 9 tons  
Truck, type ..... 4 wheel, arch bar  
Truck wheel diar. .... 30 ins.  
Truck wheel type. Steel tired, cast iron centre  
Journal, diar. and length ..... 5 x 9 ins.  
Brake beam ..... Simplex

**Railway Lands Patented.** Letters patent were issued during April, concerning Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:—

	Acres.
Calgary and Edmonton Ry. ....	3,370.40
Canadian Northern Ry. ....	482.25
Canadian Pacific Ry. grants ..... 69.81	
Canadian Pacific Ry. roadbed and station grounds ..... 6.16	
Qu'Appelle, Long Lake and Saskatchewan Rd. and Steamboat Co. ....	1,485.70
<b>Total</b> .....	<b>5,414.32</b>

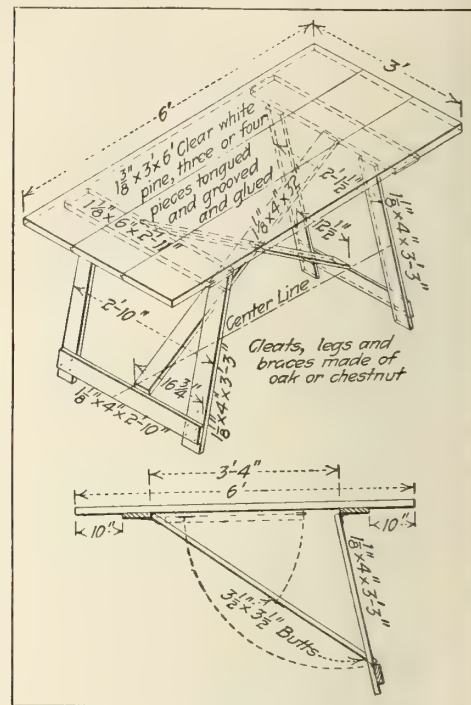
**C.N.R. Locomotive Men's Wages.**—A board of conciliation has been appointed to investigate complaints of the company's locomotive drivers and firemen on the eastern lines, who are asking for working conditions similar to those obtaining on the western lines. F. H. McGuigan, a former Vice President of the G.T.R., Toronto, will represent the company; D. Campbell, Winnipeg, the men, and Judge Coatsworth, Toronto, has been appointed Chairman.

**The Canadian Overseas Railway Construction Corps,** organized by the C.P.R., under command of its Engineer of Construction, Lt. Col. Ramsey, sailed from St. John, N.B., June 14, on the s.s. Herschel, and arrived safely at Davenport, Eng. Full particulars of this corps were given in Canadian Railway and Marine World for April and June, pgs. 129 and 219.

**The Imperial Privy Council** has decided in favor of the C.P.R., in an appeal against the judgment of the Quebec courts granting \$12,000 to a brakeman named Frechette for injuries. The Privy Council's judgment stating, "While sympathizing with the respondent, their Lordships are clearly of the opinion that he was the victim of his own negligence."

## A Field Draughting Table.

Engineering operations which require temporary offices require also portable draughting boards or tables. A draughting board resting on horses or trestles is unsatisfactory, since it lacks stability, and the trestles take up valuable space when packed in a vehicle. The accompanying illustration



shows a convenient draughting table patterned after a folding table of older design. This one, however, is steadier when open and more compact when closed. It has been tried out long enough to demonstrate its durability.—W. L. Webb, Philadelphia, Penn., in Engineering News.

## National Transcontinental Railway's Operation.

An Ottawa press report, June 23, says the negotiations between the Department of Railways and the Grand Trunk Pacific Ry. respecting the leasing of the latter's Lake Superior branch by the Government have been completed, and that a lease, in which the rental is fixed at \$600,000 a year, only awaits ratification by the Government. This amount is said to represent interest at the rate of 4½% upon the ascertained cost of the construction of the branch, and its terminal facilities at Fort William, Ont.

**The Canadian Northern Ry. Toronto Employees'** third annual picnic took place at Orillia, Ont., June 26, some 1,100 being present.

Arrangements have been made with the British Government whereby the C.P.R. will act in connection with the accumulation and shipping of munitions and war supplies in Canada. Sir Thomas Shaughnessy, who was in England in June making the necessary arrangements, is reported to have stated that the C.P.R. intended to reconstruct its manufacturing equipment so that it can make any and every sort of material that may be called for by the War Office, and the company's Purchasing Department had been placed at the British Government's disposal, and the officials would see to the shipping of all supplies.



## Transportation Appointments Throughout Canada.

The information under this head, which is almost entirely gathered from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

**Canada Southern Ry.**—F. D. POWELL has been appointed Commercial Agent, C. S.R., operating over Michigan Central Rd. via Buffalo, and the Pennsylvania Rd. and connections, vice L. S. Livingston transferred. Office, 635 La Salle Station, Chicago, Ill.

**Canadian Government Railways.**—W. R. DEVENISH, heretofore Division Engineer, I.R.C. and P.E.I.R., Moncton, N.B., has been appointed Principal Assistant Engineer, Canadian Government Railways. Office, Moncton, N.B.

A. M. HARVEY has been appointed Signal Supervisor. Office, Moncton, N.B.

See also Intercolonial Ry. and National Transcontinental Ry.

**Canadian Pacific Ry.**—G. HODGE, heretofore General Superintendent, Eastern Division, Montreal, has been appointed Assistant to General Manager, Eastern Lines. Office, Montreal.

L. C. ORD, heretofore Assistant Master Car Builder, Eastern Lines, Montreal, has been appointed Assistant Works Manager, Angus Car Shops, Montreal.

A. H. KENDALL, heretofore General Foreman, Locomotive Shops, North Bay, Ont., has been appointed Assistant Works Manager, Angus Locomotive Shops, Montreal, vice G. I. Evans, Superintendent Locomotive Shops, transferred.

W. TANSLEY, heretofore Assistant Superintendent, District 3, Eastern Division, Smith's Falls, Ont., has been appointed Acting Superintendent of Car Service, Eastern Lines, vice F. A. Gascoigne, commanding the 60th Battalion Canadian Expeditionary Force. Office, Montreal.

A. E. STEVENS, heretofore General Superintendent, Alberta Division, Calgary, has been appointed General Superintendent, Eastern Division, vice G. Hodge, promoted. Office, Montreal.

E. J. MELROSE, heretofore Assistant Superintendent, District 2, Eastern Division, Montreal, has been appointed Assistant Superintendent, District 3, Eastern Division, vice C. W. Lott, transferred. Office, Montreal.

R. G. EDWARDS, heretofore General Yardmaster, Smith's Falls, Ont., has been appointed Assistant Superintendent, District 2, Eastern Division, vice E. J. Melrose, transferred. Office, Montreal.

H. S. BARE, heretofore Resident Engineer, Angus Shops District, Montreal, has been appointed Resident Engineer, District 2, including the Angus Shops territory, which has been abolished as a separate district, vice N. E. Gutelius, transferred. Office, Montreal.

A. S. PIERS, heretofore Real Estate Agent, has been appointed Manager, Real Estate Department. Office, Montreal.

C. W. LOTT, heretofore Assistant Superintendent, District 3, Eastern Division, Montreal, has been appointed Assistant Superintendent, District 5, Eastern Division, vice W. Tansley, promoted. Office, Smith's Falls, Ont.

J. T. PEARSON, heretofore night yardmaster, has been appointed General Yardmaster, Smith's Falls, Ont., vice R. G. Edwards, promoted.

A. P. WALKER, heretofore Division Surveyor, Ontario Division, Toronto, has been appointed Assistant Division Engineer, vice G. H. Davis, transferred, and his former position has, for the present, been abolished. Office, Toronto.

J. A. IRVINE, heretofore Resident Engineer, District 4, Ontario Division, Toronto, has been appointed Resident Engineer, District 3, Ontario Division, vice D. M. Ewart, who has joined the 2nd Field Company, Canadian Engineers, for active service in Europe. Office, Toronto.

M. KELLY, heretofore Resident Engineer, Brownville Jct., Me., has been appointed Resident Engineer, District 4, Ontario Division, vice J. A. Irvine, transferred. Office, Toronto.

W. WELLS, heretofore General Foreman, McAdam, N.B., has been appointed General Foreman, North Bay, Ont., vice A. H. Kendall, promoted.

C. E. LEGG has resumed his position as General Agent, Fort William, Ont., and his former position of Trainmaster, Winnipeg Terminals, has been abolished.

O. GLEASON, heretofore General Agent, Fort William, Ont., has been appointed Agent, Union Stockyards, Winnipeg.

T. C. MACNABB, heretofore Resident Engineer, District 1, Saskatchewan Division, Regina, has been appointed Division Engineer, Saskatchewan Division, vice C. D. Mackintosh, promoted. Office, Regina.

G. A. DELACHEROIS, heretofore Resident Engineer, Saskatoon, Sask., has been appointed Resident Engineer, District 1, Saskatchewan Division, vice T. C. Macnabb, promoted. Office, Regina, Sask.

E. A. KELLY, heretofore Resident Engineer, Nelson, B.C., has been appointed Resident Engineer, Saskatoon, Sask., vice G. A. Delacherois, transferred.

J. M. CAMERON, heretofore Assistant General Superintendent, British Columbia Division, Vancouver, has been appointed General Superintendent, Alberta Division, vice A. E. Stevens, transferred. Office, Calgary.

M. E. THORNTON, heretofore District Representative, Land Department, Department of Natural Resources, Chicago, Ill., has been appointed Superintendent of Agencies, same department, Calgary, Alta.

C. D. MACKINTOSH, heretofore Division Engineer, Moose Jaw, Sask., has been appointed Superintendent, District 1, Alberta Division, vice W. A. Mather, promoted. Office, Medicine Hat.

A. DEHARNAIS has been appointed Roadmaster, Coutts, Cardston and Stirling Subdivisions, with head-quarters at Langton, Alta.

W. A. MATHER, heretofore Superintendent, District 1, Alberta Division, Medicine Hat, has been appointed Assistant General Superintendent, British Columbia Division, vice J. M. Cameron, promoted. Office, Vancouver.

R. G. THOMPSON, heretofore Assistant Colonization Agent, C.P.R., has been appointed District Representative, Land Branch, Department of Natural Resources, Chicago, Ill., vice M. E. Thornton, promoted.

**Central Vermont Ry.**—J. E. MAUN, heretofore Assistant Superintendent, Montpelier, Vt., has been appointed Superintendent, Northern Division, vice S. S. Russell, whose appointment as Special Agent was announced in our last issue. Office, St. Albans, Vt. The position of Assistant Superintendent at Montpelier has been abolished.

G. W. BROOM is reported to have been appointed Assistant to Superintendent, and Chief Dispatcher, Northern Division, St. Albans, Vt.

**Grand Trunk Pacific Ry.**—T. W. McDONAGH has been appointed Travelling Passenger Agent, Winnipeg, vice H. J. Lambkin, assigned to other duties.

J. A. MITCHELL, heretofore Locomotive

Foreman, Biggar, Sask., has been appointed General Foreman, Transcona Shops, Transcona, Man.

A. McTAVISH, heretofore Locomotive Inspector, Transcona, Man., has been appointed Locomotive Foreman, Biggar, Sask., vice J. A. Mitchell promoted.

N. C. HOOPER has been appointed Car Foreman, Smithers, B.C., vice A. McKinnon transferred.

A. McKINNON, heretofore Car Foreman, Smithers, B.C., has been appointed Car Foreman, McBride, B.C., vice W. B. McNiece transferred.

W. G. CONNOLLY, heretofore in the City Ticket Office, Vancouver, B.C., is reported to have been appointed City Passenger and Ticket Agent there.

W. B. McNIECE, heretofore Car Foreman, McBride, B.C., has been appointed Car Foreman, Prince Rupert, B.C., vice W. Thompson assigned to other duties.

H. R. BULLEN, heretofore Soliciting Freight Agent, Regina, Sask., is reported to have been appointed Soliciting Freight and Passenger Agent, G.T.R. and G.T.P.R., San Francisco, Cal.

The following station agents have been appointed: Graham, Ont., J. T. Hamlin; Mawer, Sask., W. G. Stimpson; Battleford, Sask., W. Willis. The stations at Uno, Man., and Griffin, Sask., have been closed.

**Grand Trunk Ry.**—A. E. CLARE has been appointed City Freight Agent, Montreal, vice H. A. Laird resigned to enter Canadian Government Railway's service.

H. R. BULLEN, heretofore Soliciting Freight Agent, G.T.P.R., Regina, Sask., is reported to have been appointed Soliciting Freight and Passenger Agent, G.T.R. and G.T.P.R., San Francisco, Cal.

The following station agents have been appointed: Elmvale, Ont., R. M. Black; Britton, Ont., passenger, Mrs. A. Hoag; Centralia, Ont., S. D. Bishop; outside agency, Clifton Hotel, Niagara Falls, Ont., G. J. McNamara. The outside agencies at Hemmingford, Que., and Perth, Ont., have been closed.

**Intercolonial Ry.**—C. W. PRICE, heretofore Chief Dispatcher, Moncton, N.B., has been appointed Assistant Superintendent, District 4, vice W. A. Fitch transferred. Office, Sydney, N.S.

L. S. LANDERS, heretofore transit man, District 4, Intercolonial Ry., New Glasgow, N.S., has been appointed Resident Engineer, District 3, vice W. A. Cowan transferred to National Transcontinental Ry. Office, Truro, N.S.

G. FEETHAM, heretofore locomotive driver, has been appointed acting Roundhouse Foreman, Truro, N.S., vice W. Davidson, who has left the service.

W. A. FITCH, heretofore Assistant Superintendent, District 4, Sydney, N.S., has been appointed Assistant Superintendent, District 3, vice R. S. Richardson, transferred to National Transcontinental Ry. Office, Moncton, N.B.

A. R. MACGOWAN has been appointed Division Engineer, I.R.C. and P.E.I.R., vice W. R. Devenish, promoted. Office, Moncton, N.B.

**London and Port Stanley Ry.**—W. M. GUY, heretofore chief clerk, Pere Marquette Rd., London, Ont., has been appointed General Traffic Manager, L. & P.S.R. Office, London, Ont.

**National Transcontinental Ry.**—As mentioned in Canadian Railway and Marine World for June, the National Transcontinental Ry. from Moncton, N.B., to Graham, Ont., is being operated as part of the Government railway system. F. P. Gutelius, General Manager, has announced that the jurisdiction of the following general officials has been extended over the N.T.R.: C. A. Hayes, General Traffic Manager; S. L.



Shannon, Comptroller and Treasurer; H. F. Alford, General Solicitor and General Claims Agent; R. W. Simpson, General Fuel and Tie Agent; H. H. Melanson, General Passenger Agent; G. E. Smart, Master Car Builder; L. Lavoie, Purchasing Agent; W. F. Taylor, General Storekeeper; W. N. Rippey, Superintendent Car Service; all with offices at Moncton, N.B.

C. A. Hayes, General Traffic Manager, has issued a circular, announcing the extension of the jurisdiction of the following officials of the Traffic Department over the N.T.R.: D. A. Story, General Freight Agent; H. H. Melanson, General Passenger Agent; A. T. Weldon, Assistant General Freight Agent; R. E. Perry, Assistant General Freight Agent; O. Cameron, Freight Claims Agent; G. C. Allen, General Baggage Agent; all with offices at Moncton, N.B.

We have been officially advised that the Grand Trunk Pacific Ry. Lake Superior Branch has not yet been taken over by the Government, and that therefore the jurisdiction of R. S. RICHARDSON, whose appointment as Superintendent, District 3, Armstrong to Winnipeg, and Superior Jct. to Fort William, with office at Armstrong, Ont., was announced in our last issue, is confined to the territory between Lake Superior Jct. and Armstrong, but it is expected that the Lake Superior Branch will shortly be taken over, when he will cover the whole territory, with office at Fort William, Ont.

C. WHITE has been appointed Roundhouse Foreman, National Transcontinental Ry., Edmundston, N.B.

A. BABIN, formerly Resident Engineer on Construction, La Tuque, Que., has been appointed Resident Engineer, Maintenance of Way, District 1, N.T.R., Quebec to O'Brien. Headquarters, Quebec, Que.

J. E. LePAGE has been appointed Division Freight Agent, N.T.R., west of Edmundston, N.B., to O'Brien, Que. Office, Quebec, Que.

A. BEAUSEIGLE has been appointed Roadmaster, District 1, N.T.R., at Parent, Que.

M. CASEY has been appointed Roadmaster, District 1, N.T.R., at Parent, Que.

S. G. TIFFIN, heretofore Division Freight Agent, Montreal, has been appointed Assistant General Freight Agent in immediate charge of traffic on the Intercolonial Ry. west of Campbellton, N.B., and on the N.T.R. west of Edmundston, N.B., to Graham, Ont. Office, Montreal.

L. G. ROBLIN, heretofore District Master Mechanic, District 1, Lake Superior Division, C.P.R., North Bay, Ont., has been appointed General Master Mechanic, N.T.R., Quebec to Winnipeg, and the Lake Superior Branch of the G.T. Pacific Ry., from Fort William to Superior Jct. Office, Cochrane, Ont.

W. A. COWAN, heretofore Resident Engineer, District 3, Intercolonial Ry., Truro, N.S., has been appointed Division Engineer, N.T.R., Cochrane, Ont.

A. H. WILLET has been appointed Assistant Division Engineer, N.T.R., Cochrane, Ont.

J. E. GIBAUT has been appointed Resident Engineer, District 2, N.T.R. Headquarters, Cochrane, Ont.

H. A. LAIRD, heretofore City Freight Agent, G.T.R., Montreal, has been appointed Division Freight Agent, N.T.R., O'Brien, Que., to Graham, Ont. Office, Cochrane, Ont.

W. J. CHISHOLM has been appointed Bridge and Building Master, N.T.R., Cochrane, Ont.

P. HOUSTON has been appointed Roadmaster, N.T.R., Cochrane, Ont.

J. WILSON has been appointed Roadmaster, N.T.R., Grant, Ont.

Pere Marquette Rd.—L. C. WHITE has been appointed General Car Foreman, St. Thomas, Ont., vice A. Ward, who has left the service.

R. W. YOUNG, Division Freight and Passenger Agent, Pere Marquette Rd., London, Ont., has had his office moved to St. Thomas, Ont., the office at London having been closed.

Quebec Central Ry.—J. T. REID, heretofore Assistant Superintendent, has been appointed Superintendent, vice J. Fortin, who has asked to be relieved of the responsibilities of the position, owing to impaired health. He has been assigned to special duties in the General Manager's office. Office, Quebec, Que.

Southern New England Rd.—J. E. O'DONNELL has been appointed Assistant Engineer, Providence, R.I.

Temiscouata Ry.—C. A. STEWART, Accountant, has been appointed acting Manager, vice G. G. Grundy, General Manager, deceased. Office, Riviere du Loup, Que.

Timiskaming and Northern Ontario Ry.—T. J. GRACEY has been appointed Accountant, vice H. F. Macdonald resigned. Office, Toronto.

D. HAMILTON has been appointed Assistant Accountant, Toronto.

R. H. MITCHELL, heretofore Traffic Accountant, North Bay, Ont., has been appointed Auditor and Car Accountant.

The Superintendent's Accountant's office at North Bay, Ont., has been abolished.

Toronto, Hamilton & Buffalo Ry.—J. N. BECKLEY, President, Rochester, N.Y., has assumed the duties of General Manager as far as necessary owing to the resignation of J. W. Eber, heretofore General Manager, on account of ill health.

F. F. BACKUS, heretofore General Traffic Manager, has been appointed Assistant to the President, and represents him at Hamilton in connection with the conduct of the company's business. All reports and correspondence from departments heretofore made to the General Manager are made to him. Office, Hamilton, Ont.

G. C. MARTIN, General Freight and Passenger Agent, now has charge of the Traffic Department, the position of General Traffic Manager having been abolished.

### Railway Finance, Meetings, Etc.

Canadian Northern Ry.—A supplementary trust deed made between the C.N.R. and the British Empire Trust Co., London, Eng., and the National Trust Co., Toronto, respecting the company's 5% income charge convertible debenture stock has been filed with the Secretary of State at Ottawa.

Canadian Pacific Ry.—The Board of Railway Commissioners is being asked to approve a lease of the Glengarry and Stormont Ry. to the C.P.R. The G. and S. R., which extends from the C.P.R. at St. Polycarpe, Que., to Cornwall, Ont., was opened for traffic, May 31.

Dominion Steel Corporation's Railways.—The President, J. H. Plummer, in his report at the annual meeting, June 24, said:—"I should include a few words about our important properties the Sydney and Louisburg Ry., and the Cumberland Ry. In addition to the carriage of the company's coal, which in itself constitutes a heavy traffic, these lines carried during the year 214,533 passengers, with passenger earnings of \$64,901.25. The freight earnings, apart from amounts charged to the Dominion Coal Co. were \$157,923.01. Their combined equipment consists of 33 locomotives, 13 passenger cars, 111 freight cars and 1,968 cars for the carriage of coal."

The Grand Trunk Ry. offered in England from June 2 to 5 an issue of £2,500,000 five-year 5½% secured notes dated July 1, 1915, due July 1, 1920, interest payable half yearly, the issue price being 99. The proceeds are to be applied in repayment of £2,000,000 of one year bills maturing July 15, 1915, and the balance to the company's general purposes. The prospectus stated that notwithstanding the far-reaching results of the war and the effect of two bad harvests the surplus net earnings in excess of fixed charges in 1914 were £425,000. As bills for £2,000,000 are to be paid out of the proceeds of this issue the increase in interest charges will amount to only £37,500 a year. A London cablegram of June 8 stated that the public subscriptions absorbed 56% of the offering, the underwriters taking the balance.

Montreal and Vermont Jct. Ry.—The officers and directors for the current year are: Chairman, E. J. Chamberlin; President, E. C. Smith; Vice President, J. G. Smith; Secretary and Treasurer, G. R. Hurlburt; Assistant Secretary and Treasurer, W. H. Chaffee; other directors, G. C. Jones and F. Smith; E. J. Chamberlin, E. C. Smith and J. G. Smith are Managing Directors.

Temiscouata Ry.—Net earnings for Feb., \$965, and for two months ended Feb. 28, \$4,991.

Toronto, Hamilton & Buffalo Ry.—In an extract from the Michigan Central Rd.'s report for the past fiscal year published in this department in June, it was stated that the M. C. R. had advanced to the T. H. & B. R. \$100,000,000 as its one-sixth proportion of the estimated cost of construction of the Erie & Ontario Ry. The amount advanced, it is almost needless to say, was \$100,000, the extra figures having been added by a typographical error.

The directors for the current year are: A. H. Smith, W. H. Newman, H. B. Ledyard, J. N. Beckley, Sir Thomas Shaughnessy, D. McNicoll, W. K. Vanderbilt, Jr., Sir Edmund Osler, D. W. Saunders, W. P. Torrance and W. L. Scott.

White Pass and Yukon Route.—Gross earnings from Jan. 1 to Apr. 21, \$57,976 against \$83,404 for same period 1914.

John Bertram & Sons Co., Ltd., machine tool manufacturers, Dundas, Ont., have offered to the Dominion Government the free use of the Wilson residence property in Dundas, which the company owns, as a home for convalescing soldiers for whatever time it may be required. The house, which has a broad verandah, is situated in about an acre of ground which is shaded by large elms and well supplied with fruit trees. It will accommodate from 30 to 40 men.

Smoke Prosecution.—The C. P. R. was fined \$25 in the Ottawa Police Court, June 8, for permitting black smoke to issue from the locomotive house chimneys on June 29. The smoke was described as being dense for 39 minutes in one hour and for 46 minutes in another hour. On the last occasion fence it appealed and the conviction was when the company was fined for a similar of quashed.

G. T. Pacific Ry. Hotel at Edmonton. The Hotel Macdonald, built by the G. T. Pacific Ry. at Edmonton, Alta., has been opened for business, with L. Low as Manager. There are six bedroom floors with 34 bedrooms on each, all with outside light. Of these, 22 on each floor have private baths, and the balance are equipped with running water. All have telephones.

A. McTavish, Locomotive Foreman, Grand Trunk Pacific Ry., Biggar, Sask., writes:—"I have taken Canadian Railway and Marine World for some 3 or 4 years and am pleased every time I get it."



# Canadian Railway AND Marine World

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## Sale of Alaska Northern Railway Ques- tioned.

Washington, D.C., press dispatch, June 15.—Questioning the right of some of the defendants to sell the Alaska Northern Ry. to the U. S. Government to form part of the government railway in Alaska, E. A. Shedd & Co., bankers, of Chicago, J. R. Thompson, City Treasurer, of Chicago, and others, to-day filed suit in the Supreme Court of the District of Columbia asking that a receiver be appointed to receive the purchase price. Some of the defendants are: F. K. Lane, Secretary of the Department of the Interior; W. G. McAdoo, Secretary of the Treasury; J. Burke, Treasurer of the United States; the American Surety and Trust Co., the Sovereign Bank of Canada, the International Assets, Limited, W. E. Stavert, F. G. Jemmett, W. J. Boland and G. T. Clarkson, of Toronto.

Associate Justice W. P. Stafford issued a rule for the defendant Government officials to show cause on June 18 why they should not be restrained by an order of the court "from paying defendants Stavert, Jemmett, Boland, G. T. Clarkson or the International Assets, Limited, \$1,150,000, or any part thereof, and the American Security & Trust Co. from surrendering possession of the stocks, bonds and securities, the subject of the contract mentioned in the bill."

Seward, Alaska, press dispatch, June 19: "Preparations by the Alaskan Engineering Commission to take over the Alaska Northern Ry. next month were practically completed to-day. The commissioners have gone ahead with their plans without regard to the suit brought in Washington, D.C., by the bondholders of the old Alaska Central Rd. to prevent the Government making payment to the Canadian bondholders of the reorganized Alaska Northern."

A locomotive failure for every 18,000 miles for a regularly assigned locomotive, as against 6,000 miles per failure with pooled locomotives, over a 6 months period, is the experience of the St. Louis and San Francisco Rd. Changing from the pool system has also brought about a decrease of 6% in the fuel used, with an increase of 2.33% in the tonnage handled.

## Transportation Members of Canadian Society of Civil Engineers Serving in the War.

Among the many members of the Canadian Society of Civil Engineers serving in the war are a number who are normally engaged in transportation service. Following is a list of these:

**Members**—H. S. Greenwood, Colonel, First Contingent; ex-Assistant Chief Engineer, Mackenzie, Mann and Co., Ltd., Toronto.

C. L. Hervey, Major, Superintendent of Construction, Canadian Overseas Railway Construction Corps; Civil Engineer, Montreal, formerly in charge of the Glengarry and Stormont Ry. construction.

J. C. Hesketh, First Contingent; Assistant Engineer, C.P.R., Winnipeg.

R. W. Leonard, Major, Corps of Guides, England; ex-Chairman, National Transcontinental Ry. Commission.

C. W. P. Ramsey, Lieut. Colonel, Canadian Railway Construction Corps; Engineer of Construction, C.P.R., Montreal.

F. A. Wilkin, First Contingent; C.P.R., Winnipeg.

**Associate Members**—J. C. Ball, Lieutenant, 7th Battery, 3rd Brigade, Canadian Field Artillery, First Contingent; Welland Ship Canal, Section 3.

H. L. Bodwell, Adjutant, 47th Battalion; Assistant Engineer, Grand Trunk Pacific Ry., South Fort George, B.C.

W. T. Daniel, Lieutenant, First Contingent; Assistant Engineer, C.P.R., Regina, Sask.

W. M. Everall, First Contingent; Government Inspecting Engineer, Canadian Northern Ry., Port Arthur, Ont.

G. B. Hughes, First Contingent; British Columbia Electric Ry., Victoria.

D. A. Livingston, 2nd Canadian Mounted Rifles, Second Contingent; C.P.R. Construction Department, Winnipeg.

A. deC. Meade, Royal Engineers; Regina Municipal Ry., Regina, Sask.

V. Michie, First Contingent; Assistant Engineer, C.P.R., Winnipeg.

T. Muirhead; British Columbia Electric Ry., Victoria.

A. Stewart, 29th Battalion; Engineering Department, Esquimalt and Nanaimo Ry., Victoria.

R. A. Stirling, 12th Battalion, First Contingent; National Transcontinental Ry., Quebec.

J. A. Symes, Lieutenant, 56th Battalion, C.P.R. Irrigation Department, Calgary.

**Junior**—L. E. Allen, Divisional Engineers, First Contingent; National Transcontinental Ry., Hearst, Ont.

S. R. Lamb; C.P.R. Construction Department, Winnipeg.

J. A. Mackenzie, Captain, 26th Battalion, Second Contingent; National Transcontinental Ry., La Tuque, Que.

L. F. Merryvees; Board of Engineers, Quebec Bridge, Nelsonville, Que.

G. H. N. Monkman, Canadian Railway Construction Corps; C.P.R. Construction Department, Winnipeg.

H. K. Morrison, Divisional Engineers, Second Contingent; Canadian Northern Ontario Ry., North Bay, Ont.

S. W. Shackell, Lance Corporal, Divisional Engineers; C.P.R., Smiths Falls, Ont.

**Railway Lands Patented.**—Letters patent were issued during May in respect of Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:

	Acres.
Calgary and Edmonton Ry. ....	1,760.00
Canadian Pacific Ry. ....	1,273.387
Qu' Appelle, Long Lake and Saskat- chewan Rd. and Steamboat Co. ...	2,483.22

Total



# Electric Railway Department

## Electrification of the London and Port Stanley Railway.

The electrification of the L. and P. S. R. is nearing completion, and the official opening is to occur at an early date, possibly during this month. The line is 23.66 miles long, connecting London, Ont., with Port Stanley, on Lake Erie, passing through St. Thomas. This line was one of the earliest built in this country, and since its inception in the early fifties, has had an interesting history, passing through several different managements in an attempt on the part of the municipal owners to secure better operation.

The line had its inception in a public meeting held in London in Jan. 1853, to consider the building of a line from London to Port Stanley, the movers being Murray Anderson, for many years President of the line,

ever, reports from 1860 to 1870 showed that in no year did the gross earnings fall below the operating expenses. In 1870, 14 years after the line had been placed in operation, the revenue was \$43,002.44, and the working expenses \$30,293.00, leaving a net profit of \$12,709.44. This was obtained with a total train mileage of 48,418, of which over 90% was revenue traffic. The total operating cost, including repairs, etc., was 62 cts. per train-mile.

The building of the line was commenced with a view to the general advantage and improvement of the country interested, rather than from any expectations of profits to be directly derived from revenue. It is said that in the early days the amount of

20 years. As the leasing company had the standard gauge, the L. & P. S. R. gauge was changed to conform to it. The L. & P. S. R. had another change when on Aug. 12, 1882, the G. T. R. absorbed the Great Western Ry., and operated the line until the completion of the lease in 1894. Prior to the expiration of the lease, the city of London acquired the stock held by the city of St. Thomas, in 1893.

On Dec. 1, 1893, an agreement was made between the L. & P. S. R. and the Lake Erie and Detroit River Ry., for the lease by the latter of the L. & P. S. R. for 20 years from Jan. 1, 1894 for \$10,000 a year rental, and in addition 10% on all gross earnings and receipts exceeding \$80,000 a year, which was

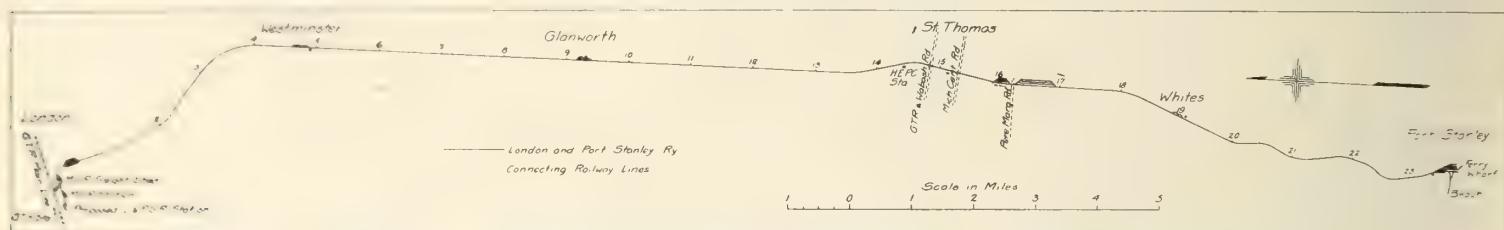


Fig. 1.—London and Port Stanley Railway, showing Connections.

and John Carling. The company was incorporated under its present name in 1853, under chap. 133, statutes of Canada. In August of that year the city of London de-

traffic anticipated was not realized by the projectors, but by bringing into competition the then existing trunk lines, a reduction in freight rates on farm produce and merchan-

confirmed by the Ontario Legislature in 1894. This lease was transferred to the Pere Marquette Rd. about 1906, when the latter leased the Lake Erie and Detroit River Ry. On the expiration of the L. & P. S. R. lease on Jan. 1, 1914, a temporary arrangement for the operation of the line was entered into with the Pere Marquette Rd., pending the electrification of the line, which was then in contemplation.

By the City of London Act, 1913, the corp-

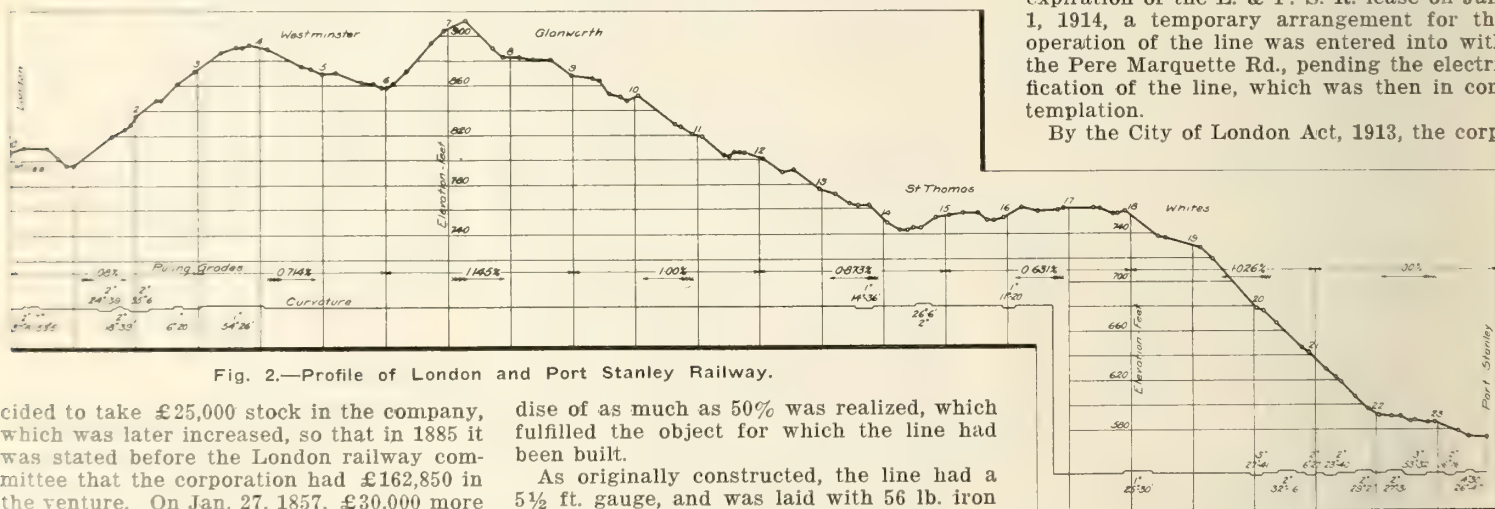


Fig. 2.—Profile of London and Port Stanley Railway.

cided to take £25,000 stock in the company, which was later increased, so that in 1885 it was stated before the London railway committee that the corporation had £162,850 in the venture. On Jan. 27, 1857, £30,000 more was granted by London to the railway. A book on Canadian railways, published in 1870, states that at that time the stock subscribed by the different municipalities, was as follows: London, \$220,000; Middlesex county, \$80,000; Elgin county, \$80,000; St. Thomas, \$8,500; total, \$388,500. It was also stated that the railway was then indebted to London as follows: 1st mortgage bonds, \$175,000; stock, \$220,000; loans on 1st and 2nd mortgage bonds, \$220,000; interest, etc., \$502,126; total, \$1,342,248. The amount of private stock held at that time was only \$27,750. The line was opened Oct. 2, 1856.

From the first the line labored under financial difficulties from the fact that the cost of construction, which amounted to \$1,027,928.24, exceeded the estimate by about \$400,000, owing to the heavy cuttings, long embankments, and expensive bridges. How-

dise of as much as 50% was realized, which fulfilled the object for which the line had been built.

As originally constructed, the line had a 5½ ft. gauge, and was laid with 56 lb. iron rails. The bridges and all buildings were of wood. The rolling stock in 1860 consisted of 2 locomotives, 3 passenger cars, 42 freight cars and 2 baggage cars. This had been increased in 1870 by the addition of 3 more passenger cars and 2 freight cars. Between 1860 and 1870, the passengers carried had increased from 21,919 to 44,427, more than double, and the freight tonnage from 16,780 to 23,831, about 30%. The original gauge of 5½ ft. received early consideration with regard to changing to the standard 4 ft. 8½ in. gauge, as all the connections with the exception of the G. T. R. were adopting that gauge.

On Apr. 25, 1870, the Great Western Ry. entered into an agreement with the L. & P. S. R. for a 99 year lease for the station and connection at Waterloo St., London, in consideration of the building of shops, and on Mar. 24, 1874, it leased the L. & P. S. R. for

operation was given power to lease the L. & P. S. R. from the L. & P. S. R. Co., to construct and equip the line as a steam or electric road, and to raise not exceeding \$700,000 to construct, equip and operate it. The act also provided that the city might, by passing a bylaw, form a commission to be called The London Railway Commission, which would have the whole management and control of the construction, equipment, maintenance and operation of the line, the commission to have a membership of five, including the mayor ex officio, the other four to be elected for periods of two years, two to be elected annually. The implementing bylaw was passed by the London City Council, Nov. 29, 1913. The commission now consists of Sir Adam Beck, M.L.A., Chairman, P. Pocock, Vice Chairman, W. Spittal, Secretary (pro tem), M. D. Fraser, K.C., and H.



A. Stevenson, Mayor. This commission decided on the electrification of the line.

**Traffic.** As mentioned earlier the line was originally projected as a means of developing the country it traversed, and at the same time to provide an outlet for the populated centres along it to visit the pleasure grounds at Port Stanley, where the company acquired an area on the shore for that purpose. From the earliest days a heavy excursion traffic has been developed, for the encouragement of which rates less than  $\frac{1}{2}$

handled one mile amounted to 10,322,663, the average distance hauled is about 16 miles, showing that the bulk of the traffic is through, making for good operating conditions. The total freight revenue was \$84,692.88; total freight earnings, \$93,373.65; freight earnings, per train mile, \$1.6146; proportion of total freight earnings to total earnings, 68.73.

For the year ended June, 30, 1914, maintenance of way and structures cost \$25,008.89; maintenance of equipment, \$31,257.03; traffic

the London Railway Commission that the existing traffic interchange agreements will terminate July 1, 1915. Negotiations are now in process with both this line and the other three for new interchange arrangements, and it is expected that an early settlement of the question will be made.

The L. & P.S.R. has been using the G.T.R. station in London, but arrangements are being made for a separate terminal to the south of the G.T.R. station, on Richmond St., where the line will stub end. To permit

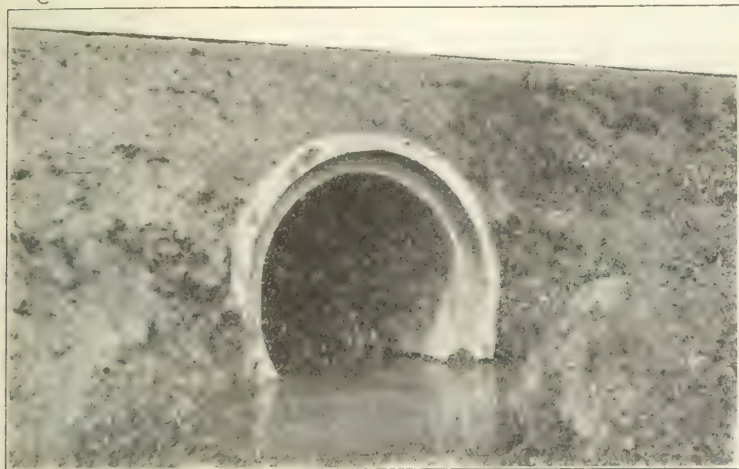


Fig. 3.—Sixty Inch Concrete Culvert replacing Wooden Box.

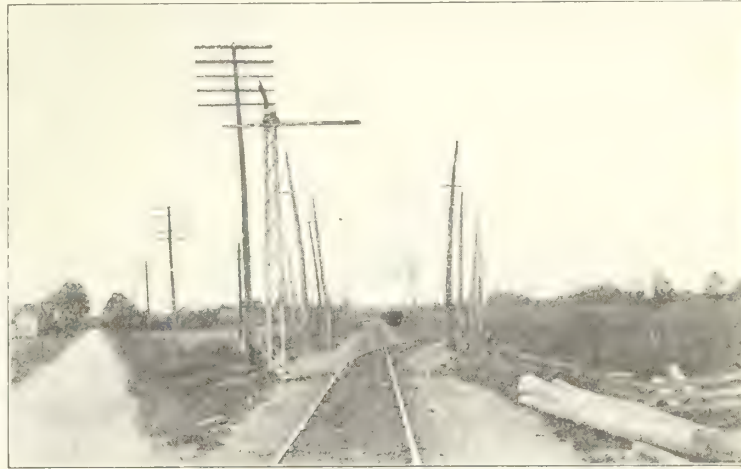


Fig. 5.—St. Thomas Yard, Looking North from Southerly Approach.

ct. a mile were given. This traffic has ever since remained the principal passenger business handled, large numbers travelling by the line from both London and St. Thomas during the summer, a good service at attractive rates having been maintained by the successive operating companies. For the year ended June 30, 1914 the passengers carried were 132,669, at a rate of 1.574 cts. a mile. The mileage of passenger trains was 64,551, and of mixed trains 14,739. The

expenses, \$6,777.00; general expenses, \$8,230.15; total operating expenses, \$180,915.11. This gave a ratio of operating expenses to operating revenue of 133.18, a deficit of \$45,073.37.

In addition to the traffic handled by the lessee, the Pere Marquette Rd., the Michigan Central Rd. runs all its trains to London over the line from St. Thomas. The freight traffic of this line in London is very high. Likewise, the Pere Marquette traffic from

the entry of its line to this new point, the Board of Railway Commissioners for Canada issued orders 23,752 and 23,753, May 28 and 27 respectively, granting the railway power to construct a track on the north side of Bathurst St. between Wellington and Richmond Sts., and to take possession of certain G.T.R. lands as follows: A 40 ft. strip between Wellington and Clarence Sts., a 50 ft. strip from Clarence St. westerly, immediately north of Bath-



Fig. 4.—Overhead Construction on a Curve.



Fig. 6.—Overhead Construction at Glanworth Siding.



Fig. 7.—Overhead Construction on Bridge south of St. Thomas.

revenue per passenger train mile was \$0.51563. The total passenger earnings were \$40,884.22, or 30.09% of the total earnings.

Freight is of course the principal part of the traffic handled, consisting primarily of coal brought across Lake Erie from the Pennsylvania coal fields to Port Stanley by car ferry. Of the total freight tonnage of 637,869 tons carried by the line in the above mentioned period, 552,182 tons, or 86%, was coal, of which 482,807 tons was bituminous and 69,375 tons anthracite. As the freight

the west, coming into St. Thomas over its leased Lake Erie and Detroit River Ry., is interchanged there for passage easterly by the Michigan Central Rd., over the section of the L. & P. S. R. connecting the two lines in St. Thomas, a distance of nearly a mile.

Agreements exist for the interchanging of G. T. R., Michigan Central Rd., Pere Marquette Rd. and Wabash Rd. traffic, the first at both London and St. Thomas, and the latter three at St. Thomas only. The Michigan Central Rd. has served notice on

the west of the foregoing for approximately the same distance to the easterly limits of Richmond St., immediately north of Bathurst St. It is also authorized to construct its tracks and erect poles, fixtures and wires along Bathurst St., between its present track at Burwell St. to connect with the authorized property on Wellington St., and is authorized to use the existing track of the Michigan Central Rd. between Burwell and Wellington Sts.

It is proposed to erect a new station on



the west side of the line in St. Thomas on Talbot St. to replace the existing station about two blocks further north, which will then be removed. No immediate changes are in contemplation for the terminals at Port Stanley.

**Rehabilitation of the Line.** When the line was taken over by the London Railway Commission it was physically in a very bad condition, and required complete rehabilitation of the track, and structures, with the exception of the bridges, to place it in good operating condition. The renovating was handled through the Pere Marquette forces, which

All the bridges were in good condition and required no repairs of consequence, but the culverts had for the most part fallen into disrepair, and required either replacement or reinforcing. Two new reinforced concrete culverts were built at mileage 3.2 and 12.4, replacing in one instance a broken masonry one, and in the other, a wooden box culvert. These two culverts are 8 x 6 ft., made of reinforced concrete, with wing walls on each side. Seven old masonry culverts were reinforced with a 6 in. lining of reinforced concrete, the mud sills being also removed and replaced with from 6 to 12 ins.

28 in. centres. The cross arm, 26 ft. clear above the rail, is a 4 in. 5½ lb. channel, bolted to two of the vertical arms, and is braced in front with light angles. The pole legs have a slight batter, 28 ins. from corner to corner of the angles at the base, and 12 ins. at the top of the pole. The poles are placed at 180 ft. centres on tangents, and at from 140 to 160 ft. on curves. They call for a strength to resist a strain of 2,000 lbs. at the top, failing at from 2,500 to 2,700 lbs. The tension will seldom exceed from 500 to 1,000 lbs. In yards, either wooden poles alone, or the steel poles with intermediate wooden



Fig. 8.—Hydro Electric Power Commission Sub Station at St. Thomas.



Fig. 9.—Method of Stringing Trolley and Feeder Wires.

was still looking after the line on the short term agreement made on the expiration of the 20 year lease. As mentioned in Canadian Railway and Marine World, Sept. 1914, contracts were let as follows: Algoma Steel Co., 3,000 tons of steel rails and angle bars and 30,000 tie plates; J. J. Gartshore, 380,000 spikes; Canadian Ramapo Iron Works, 52 sets of switches and frogs; Steel Co. of Canada, 34,000 track bolts and 65,000 tie plates; and Canadian Concrete Products Co., 1,100 ft. of concrete piping of various sizes. The rails are 80 lb. Canadian Northern section,

of concrete. About 15 concrete pipe culverts were put in, replacing for the most part broken down wooden box culverts. These varied in size from 24 to 72 ins., one of the 60 in. ones being shown in the accompanying fig. 3.

**Electrification.** For the electrification of the line, 1,500 volt d.c. was selected after a study of the single and three phase a. c. system, and the high and low d.c. systems, the 1,500 volt d.c. offering what appeared to be the best power for the conditions to be contended with, most of the more recent

poles, are employed, all at 90 ft. spacing. The wooden poles used are from 35 to 40 ft. long, with an 8 in. top.

Catenary suspension is employed on all main line work, with direct suspension in yards with wooden poles. The trolley wire is 4-0 grooved copper, suspended by clips at 20 ft. centres from a 300,000 c.m. copper catenary wire. The trolley wire is 23 ft. 3 ins. above the rail, giving a suspension at the poles of about 3 ft. The suspension consists of single and double pull-offs, depending on location.



Fig. 10.—Bonding Rails with the Oxy-acetylene Torch.



Fig. 11.—Port Stanley Yards, showing Car Ferry Wharf in Distance.

and with the exception of the tracks in London, St. Thomas and Port Stanley, and certain sidings, were laid during 1914. All other rail laying, with the exception of a few of the sidings now under discussion with the Pere Marquette Rd. with regard to transferring to the Commission, have since been laid, most of the ties being replaced by new untreated cedar throughout the whole length of the line, and all the track reballasted with gravel taken from a gravel pit adjoining the line just south of St. Thomas, near Whites, so that today the track is in excellent condition.

interurban electrification projects in Canada and the United States having adopted this voltage. The overhead work is supported on steel poles, which also carry the feeders, and dispatching wires. The poles are made of galvanized structural steel shapes, and weigh complete about 800 lbs. They are of triangular form, 35 ft. 0¼ in. high, bedded in a triangular concrete base to give a 4 in. casing of concrete outside of the corners. The bases are 7 ft. deep, and are imbedded 6 ft. in the earth. They consist of three 60 deg. angles, 3-16 in. thick flanges, tied together with 3-16 x 4½ in. batten plates about

The line is anchored every ¼ mile by steel poles placed on the opposite side of the track, with an anchoring wire between it and the next adjoining pole, to which the catenary is tied. Dead ends are inserted at every 4 miles, arranged for in a somewhat similar manner to the anchoring, with a pole on the opposite side, the dead ended wires paralleling each other a short distance, and then swinging off to the dead end poles. An anchor pole is shown in fig. 4.

Deflectors are provided at all switches, and in the larger yards the overhead work is direct suspended from cross spans from



the wooden poles, as in the St. Thomas yard, as shown in fig. 5, where the poles and cross suspension wires are shown prior to the trolley wire suspension. At minor sidings, such as that at Glanworth, fig. 6, the steel poles are carried through, with wooden poles on the siding side of the track, with suspension wires across from the adjoining steel poles to the wooden ones. On bridges the catenary construction is carried through by suspending the wires from a light steel overhead bridge as shown in fig. 7. All the insulators are tested to 3,000 volts. The sectionalizing is manually operated. Lightning protection is of the circuit breaker type and is provided at every fifth pole.

The bracket on the off side of the pole will carry 4 signal wires and a 500,000 c.m. aluminum feeder from the St. Thomas substation to Port Stanley. There are substations at London and St. Thomas, each equipped with two 500 k.w. 1,500 volt d.c. rotary converters, the one at London being located in the municipal electric plant, and the other at St. Thomas, in the Hydro Electric Power Commission of Ontario's substation, shown in fig. 8.

The method of erecting the overhead work is shown in fig. 9. The tops of two box cars were fitted with wooden frames, between which boards were placed on longitudinal members. The side railing above this floor was collapsible, swinging down on the floor when travelling on the line. The two cars, with a cable car, were moved along the line by a locomotive.

The process of bonding is shown in fig. 10. Ohio Brass Co. 4-0 copper bonds are used, welded to the outer side of the rail heads. The outfit employed consisted of a light four wheel car on the rails, carrying two cylinders, one of oxygen, and one of acetylene, behind which were supported a number of strands of copper wire for brazing. The process makes a good union very quickly.

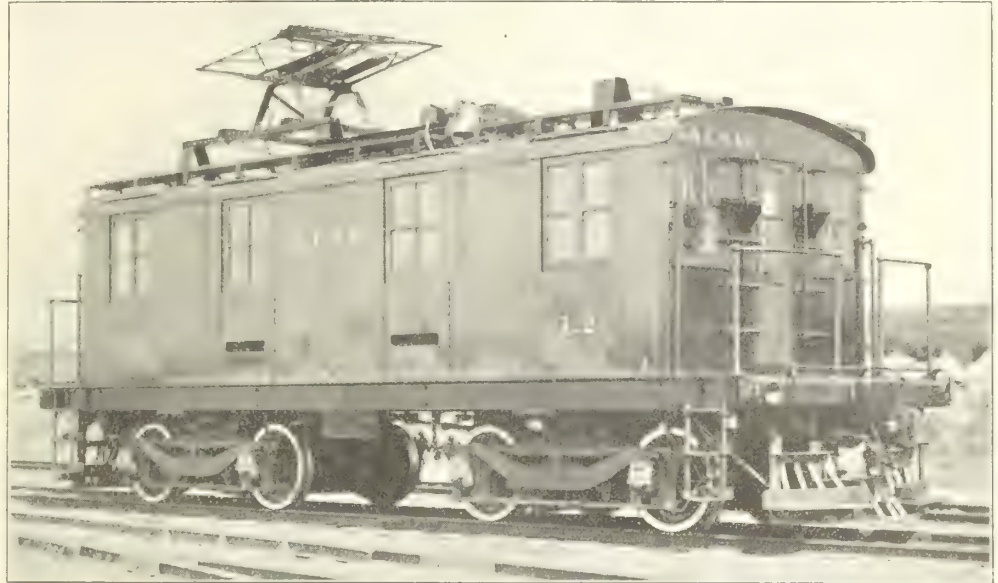
**Electric Locomotives.** As mentioned, the freight traffic consists chiefly in hauling loaded coal cars from Port Stanley to St. Thomas and London, a car ferry, operating over 10 months in the year, delivering the

ing to the line 30 loaded cars, and taking away 30 empties, each trip. The Port Stanley switching yard is practically level, and is approximately 1,000 ft. long. It is shown in fig. 11, which also shows the ferry dock in the distance.

These were the conditions to be met in designing the electric locomotives. For the purpose of specifying their capacity it was assumed that the traffic would be handled in 800 ton trains, and that certain periods of

sidings, and a train made up for the return trip, consuming possibly an hour.

Three electric locomotives, preliminary descriptions of which appeared in Canadian Railway and Marine World, Nov. and Dec. 1914, have been built. They are of the 4-0-4 type and are carried on two swivel trucks bringing all the weight on the drivers, while the equipment is housed in a steel box type cab extending over practically the entire length of the locomotive. Each one is pro-



Locomotive (Temporarily Equipped with One Light Trolley).

time would be desirable in handling the switching and interchange at points along the line. For instance, immediately after unloading and reloading the ferry, the locomotive would be required to classify the cars and make up the train in an approximate time of 45 mins., the maximum train to be moved being assumed at 15 loaded cars of 70 tons each. After this Port Stanley yard switching, the locomotive would haul the assumed loading of 800 tons up grade to

vided with four GE-251, 750-1500-volt motors designed for 750 volts across each armature and insulated for 1500 volts. Two motors are connected permanently in series and the two-motor groups thus formed are capable of connection in series or parallel for speed control. The cab is divided into three compartments, one at each end for accommodating the operator, and an intervening compartment where the control equipment and accessories are located. The operating compartments are provided with 1500 volt electric heaters. Each of the GE-251 motors has an hourly rating of 245 h.p. with 1500 volts on the trolley. At this rating the locomotives exert a tractive effort of 21,500 lbs. Control is effected by a double end, type M, standard equipment, a master controller at each operating position actuating the main 1500-volt contactors by means of a 600-volt circuit supplied from a dynamotor. Multiple unit train operation is arranged for so that the simultaneous control of three locomotives coupled together can be accomplished from any master controller. The equipment is also so designed that a locomotive may haul a train of 8 or 10 passenger trailer cars and provide 600 volt lighting energy for them. The current collectors consist of pantograph slider trolleys having two contact pans pressing against the trolley conductor. Two of these devices are furnished on each locomotive. They are electro-pneumatically controlled from any operating position with one, two or three locomotives hauling a train. The pantograph is shown in fig. 12. It is novel in design, the legs crossing each other in lazy-tong fashion, the reason for this arrangement being the requirement of a vertical range of 9 ft., without unduly lengthening the length depressed. The specifications call for a maximum safe speed of 45 m.p.h., and a capacity for accelerating an 800 ton train on a 1% grade with a clean, dry rail, and to be able to develop a drawbar pull for a 5 min. period corresponding to a 35% adhesion. They

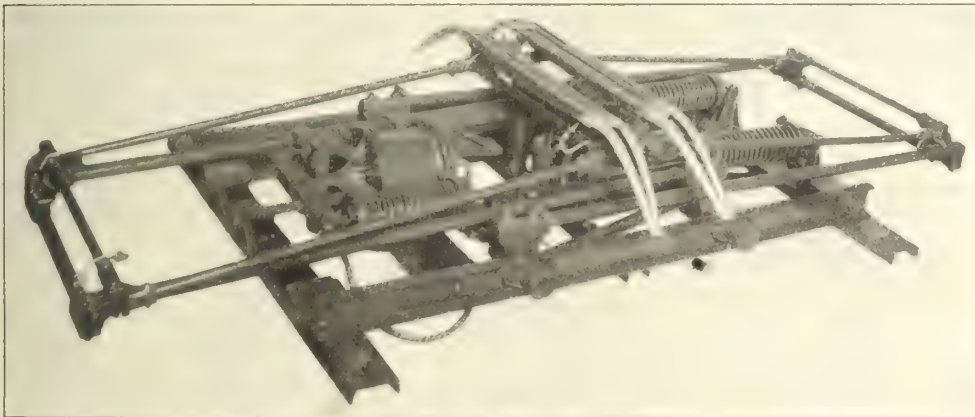


Fig. 12. Pantograph Slider Trolley.

cars to the line from the Pennsylvania coal fields across Lake Erie. Some additional traffic, consisting principally of loaded coal and merchandise cars, is delivered to the line at St. Thomas for London. The traffic from London to St. Thomas consists of loaded merchandise cars, and empty coal cars, while between St. Thomas and Port Stanley it consists almost entirely of returning empty coal cars for delivery to the car ferry. This ferry has a capacity of 30 cars on its four tracks, the two central tracks holding 8 cars each, and the outer two 7 cars each. It can make two round trips a day, deliver-

St. Thomas, with power to stop and start again at Whites, where a car might be passed. In St. Thomas the switching service, consisting of picking up and setting off cars to interchange lines and sidings, might take about 30 mins. The assumption is made that the trainload before reaching and after leaving St. Thomas would be approximately the same, on account of the balance between the freight dropped off and the London interchange from the connecting railways. Stops might be required at Glanworth and Westminster, and on arriving in London the cars would be distributed to the various



were delivered last week by the Canadian General Electric Co.

**Cars.** The original intention in ordering the car equipment was to provide 5 motor cars and 4 trailers, of all steel construction, the design of which was given in detail in Canadian Railway and Marine World, Jan. 1915. A plan and elevation of this all steel car is shown in fig. 13. It was subsequently decided to proceed as at first intended with the 5 steel motor cars, and to change the other cars to wooden construction. These include an express car, 3 trailer cars and a box car. The motor cars are of a design approaching that in use for heavy steam railway service, and have been developed as the result of extensive study of existing equipment, profiting by the experience of lines that have had steel equipment in use for years. The general dimensions of the bodies are as follows:—

Length over all .....	59 ft.
Length over end vestibules .....	58 ft.
Length over end of car body .....	48 ft.
Width over all .....	9 ft. 6 ins.
Width over sheathing .....	9 ft. 6 ins.
Width over platform floor, including trapdoors .....	9 ft. 5 ins.

ments, and the hinges, etc. The basket racks are continuous, removable in sections, running the full length of the car, and of a bronze finish. The seats are of a high back design, finished in plush for the main compartments, and in pantasote for the smoking compartments. They are 40 ins. wide overall, with the back rising to a height of 42 ins. The aisle width is 26 ins.

Each car has two lavatories, finished in white, with a sheet steel ceiling, giving a tile effect, and equipped with water closet, washstand, 5 gallon water cooler, and all requisites. The water is provided from a 50 gal. tank over top of the lavatory, under the roof. Each side of the roof contains 10 ventilators of the deflector type, automatic in their operation. The lavatories contain special lavatory room ventilators.

Four of the motor cars have the three compartment layout, while the other one has the two compartment layout. In the three compartment layout, the car end is slightly changed so as to incorporate the vestibule into the baggage compartment, 8 ft. 11 ins. long. Adjoining is the smoking compartment, 13 ft. 8 ins. long, with the main com-

also for simultaneous sanding, by electro pneumatic valves, of all cars from any operating position. The pantograph trolleys are identical with those on the locomotives.

Each car carries a combined straight and automatic air brake outfit of the variable release type, with the air supply furnished by 1500-volt compressors. The compressor governors are all equalized on a special wire running throughout the train in the auxiliary train cable.

The original intention was to have the heaters of the hot air type, situated at one end of the car, delivering air through a 3 x 8 in. duct of  $\frac{1}{4}$  in. steel along the floor line of the wall. This has been changed to individual seat 1500 volt electric heaters, 28 heaters under the seats, 2 in the vestibule, and 3 in the baggage compartment. As the trailers are to be used for summer traffic only, they have no heaters, but air ducts are provided so that hot air heating may be installed, if found necessary. The baggage car has 12 electric heaters; the box car will have none. The steel motor cars were built by the Jewett Car Co., Newark, Ohio.

The trailer cars are of wooden construc-

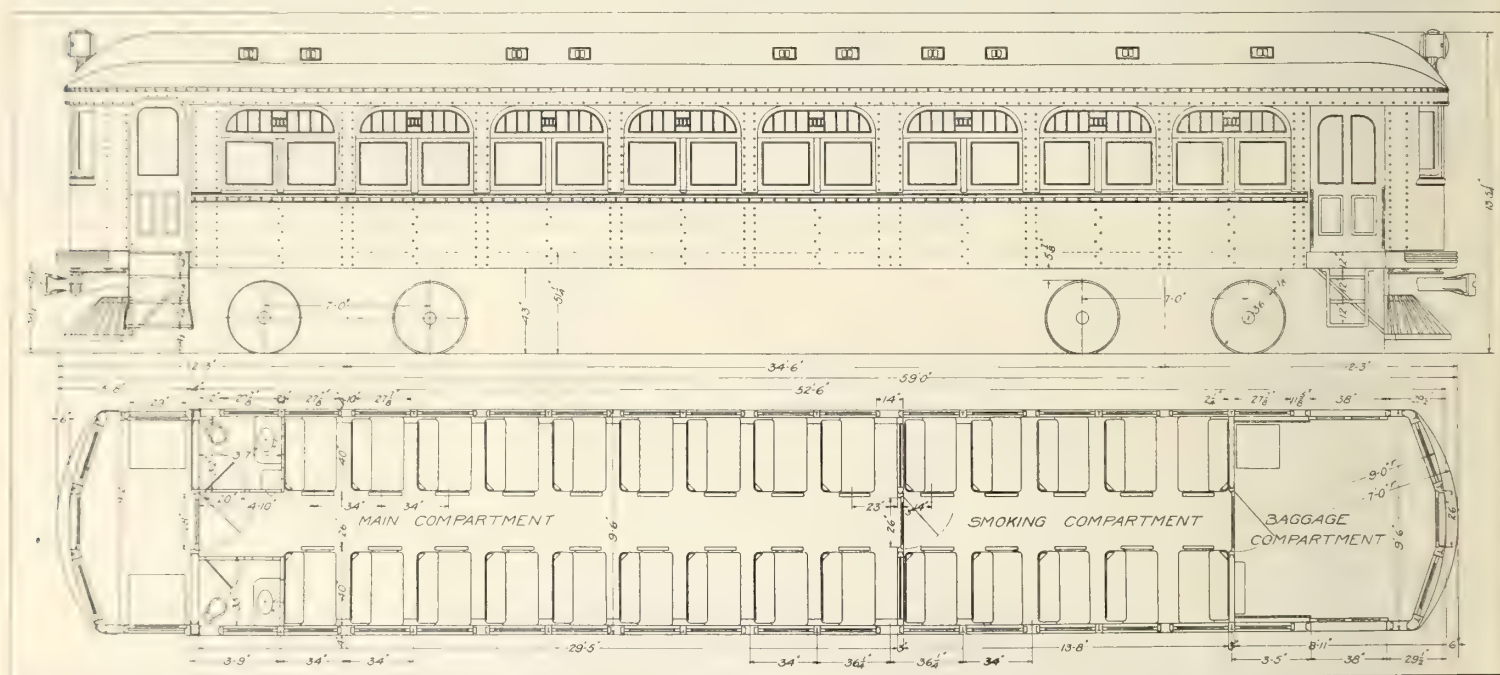


Fig. 13. Plan and Elevation of All Steel Motor Cars for London & Port Stanley Railway.

Height from rail to top of roof, car light .....	13 ft. 5 1/4 ins.
Height from under side of sills to top of roof, car light .....	9 ft. 10 1/4 ins.
Height from top of rail to top of platform .....	4 ft. 3 1/4 ins.

The weight of the car body, including heating equipment, seats, light foundations, brake rigging, draught gear, including supports, ready for the installation of the control equipment and air brakes, has been estimated as follows:—

Car body, complete as above .....	38,320
Control equipment .....	9,500
Air brake equipment .....	2,220
Four motors complete at 4,000 lbs. ....	16,000
Two 7 ft. wheel base trucks with 36 in. steel wheels .....	26,880

Total weight in lbs. .... 92,920

The entire frame of the cars is of structural steel shapes and plates, with the centre and side sills continuous. The inside finish is of the best selected inlaid mahogany, natural sanitary finish, including the doors, linings and mouldings, and the trimmings are of solid bronze, and include grab handles on the body corner posts and vestibule corner posts, match scratchers between the seats in the smoking compart-

partment 29 ft. 5 ins. long to the other vestibule. The two compartment car has the two vestibules, with the main and smoking compartments dividing the length into two compartments.

Each motor passenger car is driven by four GE-225-750/1500-volt fully ventilated commutating pole motors connected two groups of two in series. The one hour rating is 125 h. p. with 1500 volts on the trolley. Each motor car has sufficient capacity to haul one trailer car and provision is made for the motor and trailer cars to be operated in trains up to a total of three motor and three trailer cars. All trailer cars are equipped with master controllers at each end so that multiple unit train operation is possible from either end of any motor or trailer car.

Control energy for a motor and trailer is derived from a 1500/600-volt dynamotor on each motor car. The dynamotor will also supply energy for lighting one motor and one trailer car. Main and auxiliary train cables run continuously through a train, provision being made for the simultaneous raising and lowering of all pantographs and

tion, steel underframe, of almost the same general dimensions as the steel motor cars. They have two 8 in. channel centre sills, and side sills made up of a 12 x  $\frac{3}{8}$  in. plate and a 3 x 5 x  $\frac{3}{8}$  in. angle, trussed on the under side with a 1 1/2 in. truss rod having a 24 in. drop. End intermediate sills of 8 in. channels run back as far as the body bolsters, which are made up of angles and a 14 x  $\frac{3}{8}$  in. top plate and 14 x  $\frac{5}{8}$  in. bottom plate. The trucks are lighter than the motor car trucks, with 33 in. wheels and a 6 ft. wheel base. They are of the two compartment layout, as in some of the motor cars.

The express car is of wooden construction, steel underframe, the same as the trailer cars, only 64 ft. long, with the same motor equipment as the steel motor cars. It is slightly narrower than the passenger cars, 9 ft. 2 1/4 ins. wide, and has two 6 ft. doors on each side. It is equipped for double end operation.

A standard 30 ton box car, finished outside the same as the passenger cars, will be used for light freight service. It is of wooden construction throughout. The underframe consists of six sills, two side and



two centre of 4 x 6 in. section, and two intermediate of 3 x 6 in. section. It is 36 ft. 9 3/4 ins. long over the end sills, and 9 ft. wide. It has a 6 ft. centre door, an end door and windows each side of it, and side doors at the end. It uses standard freight equipment trucks. The trailer cars, baggage car and box car have been built by the Preston Car and Coach Co.

At June 30, 1914, the line had 1 passenger locomotive, 2 freight locomotives, 2 second class passenger cars and 1 combination passenger car.

### The Toronto and York Radial Railway Franchise on Yonge Street, Toronto.

The section of the Metropolitan Ry., owned and operated by the Toronto and York Radial Ry., from Shaftesbury Ave., about 100 ft. north of the C.P.R. tracks on Yonge St., northerly to Farnham Ave., approximately 1,220 ft., under franchise from the City of Toronto, was cut off at the latter point by order of the City Council at midnight, June 25, on the expiration of the franchise. Earlier on that day, the Toronto Board of Control received a letter from R. J. Fleming, General Manager, Toronto Ry., advising that the latter company had by agreement with the Toronto and York Radial Ry., taken over the portion of the latter's railway from Shaftesbury Ave. to Farnham Ave., including all rails, ties and overhead equipment, and that the Toronto Ry. would henceforth operate the section under its franchise from the City of Toronto, and as soon as the subway under the C.P.R. was completed, it would continue its Yonge St. double track through the subway and up to Farnham Ave., and give a continuous service.

A meeting of the Board of Control was immediately called, and it was urged that if the company was allowed to give such service it might be considered an extension of the franchise just expired, and therefore it was decided that the rails be disconnected at Farnham Ave. to prevent the continuance of service. On June 28, the balance of the rails were removed by the city, and the Mayor announced that the poles and overhead equipment would also be removed forthwith, and the material handed over to the T. & Y.R.R.

On June 17, 1913, the Ontario Railway and Municipal Board authorized the Metropolitan Ry. to deviate its line from Yonge St. to a private right of way from Farnham Ave. to a terminal to be built 800 ft. west and north of the C.P.R. This terminal was to take the place of the old Metropolitan Ry. station, which had been abandoned on account of the grade separation work being undertaken by the C.P.R. At that time the terminus of the line was located at Shaftesbury Ave., the continuation from that point to the C.P.R. track, or the old station, being abandoned. The city took the matter to the Ontario Court of Appeal, which decided against the company making the proposed deviation, and the company appealed to the Imperial Privy Council, which confirmed the Ontario Court's decision.

The franchise under which the Toronto Ry. operates gives the company the right to operate street railway lines on any of the streets within the city limits as at 1891, which included the section of Yonge St. north of the C.P.R. tracks to Farnham Ave., but it was specifically provided for this section, that the right of the Toronto Ry. there was subject to the existing right of the Metropolitan Ry., then operating there. The Toronto Ry. applied to the Ontario Railway and Municipal Board, June 29, for mentioned. The city opposed, claiming that the Board had no jurisdiction, and judgment was reserved.

### Electric Railway Finance, Meetings, Etc.

**Brantford Municipal Ry.** The earnings of the Brantford St. Ry., a part of the Brantford Municipal Ry., for April were \$3,263.62, and for May \$3,032.50, against \$2,728.85 for April, and \$2,833.22 for May, 1914. The difference in the earnings for May 1915 as compared with the previous month is accounted for by the fact that traffic was suspended for a portion of the time owing to the construction of the Eagle Place loop.

**British Columbia Electric Ry., and allied companies.**

	July 1, 1914 to Apr. 1915	July 1, 1913 to Apr. 1914	July 1, 1913 to Apr. 30, 1915	July 1, 1913 to Apr. 30, 1914
Gross earnings	\$540,861	\$698,508	\$6,295,902	\$7,450,590
Expenses	485,553	502,546	5,011,043	5,425,769
Net earnings	55,308	195,962	1,284,859	2,024,821

#### Cape Breton Electric Co.

	Apr. 1915	Apr. 1914	Jan. 1 to Apr. 30, 1915	Jan. 1 to Apr. 30, 1914
Gross earnings	\$25,164.46	\$26,505.11	\$101,153.46	\$108,139.10
Expenses	15,336.62	16,694.57	63,844.35	67,313.35
Net earnings	9,827.84	9,810.54	37,309.11	40,825.65

**Dominion Power and Transmission Co.**—The directors have declared a dividend of 2% on the limited preferred stock, payable July 15, to shareholders of record June 18. This leaves a further 1/2 of 1% to be paid on this stock, after which it becomes common stock, and will probably be placed on a 4% dividend basis. The directors also declared the regular semi-annual dividend of 3 1/2% on the 7% preferred stock, also payable July 15 to shareholders of record June 18.

**Hamilton St. Ry.** The receipts for the first three months of this year were \$132,536, against \$148,292 for the same period in 1914. The city percentage was \$10,602.

#### London St. Ry.

	Apr. 1915	Apr. 1914	Jan. 1 to Apr. 30, 1915	Jan. 1 to Apr. 30, 1914
Gross earnings	\$29,449.35	\$30,041.54	\$121,523.85	\$113,256.16
Expenses	23,057.25	22,631.45	87,668.22	82,747.65
Net earnings	6,392.10	7,410.09	33,855.63	30,508.58

	May 1915	May 1914	May 31, 1915	May 31, 1914
Gross earnings	\$31,435.55	\$31,116.89	\$152,959.40	\$144,373.05
Expenses	23,471.33	22,676.40	111,139.55	105,424.05
Net earnings	7,964.22	8,440.49	41,819.85	38,948.87

**Morrisburg and Ottawa Ry.**—The Ontario Court of Appeal has dismissed the appeal of 11 shareholders against county court judgments directing them to pay the balance due on shares subscribed for in the company.

**Toronto Ry., Toronto and York Radial Ry., and allied companies.**

	Apr. 1915	Apr. 1914	Jan. 1 to Apr. 30, 1915	Jan. 1 to Apr. 30, 1914
Gross earnings	\$795,816	\$830,299	\$3,227,243	\$3,292,255
Expenses	422,757	443,103	1,731,845	1,719,482
Net earnings	373,059	387,196	1,495,398	1,572,773

The receipts of the Toronto Ry. from Jan. 1, and the percentages paid to the city, for 1915, compared with those for 1914, are as follows:

	1915	City percentage	1914	City percentage
Jan.	\$ 471,226.33	70.486.33	\$ 501,843.70	75.276.56
Feb.	440,313.05	67.047.09	461,274.45	72.059.90
Mar.	489,468.30	93.141.32	530,751.18	102.150.24
Apr.	467,701.62	93.540.32	501,435.10	100.287.02
May	468,953.00	93.790.00	534,465.00	106.893.00
	\$3,336,663.20	\$117,005.00	\$3,509,709.43	\$460,044.72

**Windsor, Essex & Lake Shore Rapid Ry.**—The Canadian Dominion Traction & Lighting Co., which has taken over the Windsor, Essex & Lake Shore Rapid Ry. bonds held by the Independent Order of Foresters and the Union Trust Co., Toronto, has filed a certificate showing a decrease in common stock from \$10,000,000 to \$8,000,000. The authorized issue remains at \$2,500,000.

#### Winnipeg Electric Ry.

	Apr. 1915	Apr. 1914	Jan. 1 to Apr. 30, 1915	Jan. 1 to Apr. 30, 1914
Gross earnings	\$264,856	\$337,414	\$1,233,405	\$1,418,875
Expenses	177,336	190,815	783,156	836,489
Net earnings	87,520	146,599	450,249	582,386

The regular quarterly dividend of 2 1/2% for the quarter ended June 30 has been declared, payable July 2 to shareholders of record June 28.

### Proposed Motor Bus Service for Toronto.

The Toronto Board of Control has been approached by representatives of a projected company with an application for the right to operate motor busses on about 13 routes in various parts of the city. It was stated that the company would only use high grade vehicles and would spend about \$250,000 in starting the service. Before dealing with the application, the Board decided to consult with the City Solicitor as to the city's standing in regard to the Toronto Ry. Co.'s franchise, and other points. In a joint report by the Chief Constable, the City Solicitor and the Works Commissioner, it is stated that the application seems to contemplate an agreement extending over a period of years for an exclusive franchise for the operation of motor busses, which the city is not in a position to give except as a matter of public policy and subject to certain restrictions as to the submission of the question to the ratepayers, etc., and if anyone chooses to inaugurate a system of transit by motor busses properly licensed there is nothing to prevent them, but the city cannot enter into an agreement for protection either as to length of franchise or freedom from opposition, except as mentioned. A. D. McBride and J. W. Bain are interested in the proposal.

### Essex County Hydro Radial Railway Association.

The above mentioned association has been organized in Essex County, Ont., with the following officers: Honorary Vice Presidents, O. J. Wilcox, M.P.; A. H. Clark, M.P.; Honorary Vice Presidents, J. C. Tolmie, M.L.A., S. Ducharme, M.L.A., and L. Wigle; President, Mayor A. W. Jackson, Windsor; 1st Vice President, Reeve C. J. Montueul, Ford; 2nd Vice President, M. H. Swatnam, Leamington; 3rd Vice President, Reeve E. J. O'Neil, Paquette; 4th Vice President, Reeve J. Ducharme, Belle River; Treasurer, W. R. Woollatt, Walkerville; Secretary, H. R. Hatcher, Walkerville. The executive is composed of the above mentioned officers and the mayors and reeves of all the municipalities in the county.

It is announced that the association has been organized to promote adequate transportation facilities within the county, to extend a plan of education throughout the county favorable to the idea of public ownership of public utilities, more particularly electric power, lighting and railway systems, and to prevent the renewals of charters or franchises for electric railways or power companies by the Province of Ontario or municipalities, or the granting of new charters or franchises to private promoters where electric railway or power facilities can be furnished by the Hydro Electric Power Commission of Ontario.

**The London & Port Stanley Ry.,** as electrified, will be officially opened July 22, and members of the Hydro Electric Railway Association of Ontario throughout the province and many others have been invited to attend. The delegates will be taken from London to Port Stanley on special cars, and on returning to London will be entertained at dinner as the guests of the city.

**St. Thomas Street Ry.**—It has been suggested that this line which is owned and operated by the City of St. Thomas, Ont., be taken over by the London & Lake Erie Railway & Transportation Co., which operates a line from London through St. Thomas to Port Stanley and which runs over the St. Thomas Street Ry. track for a short distance.



## Answers to Questions on Electric Railway Topics.

Following are questions submitted to the Association Electric Railway Association's question box, with replies thereto by Canadian electric railway officials:

**Boiler Capacity and Efficiency.**—Have any of the member companies, (a) installed vertical baffle plates in Heine type boilers? (b) installed an additional horizontal baffle plate in Heine type boilers without taking out tubes? (c) What methods have been successfully adopted with Heine type boilers to increase capacity considerably over rated capacity and still maintain fair efficiency?

A. J. MacDougall, Toronto Ry., Toronto.—(a) We have not installed vertical baffle plates in Heine type boilers. (b) We have changed vertical baffling to horizontal baffling on top and bottom rows of tubes but did not put an additional row of baffles on top and middle row of tubes. An additional baffling on top of middle row of tubes gives no benefit which may not be obtained by regulating the flow of gases by proper operation of the dampers. An additional horizontal baffling where there is a poor draught will reduce the capacity of the boiler, as with the additional baffling the same volume of gases have to pass through half the area and travel twice the distance. (c) To obtain considerable capacity over rated capacity of boiler, more coal must be burned. This may be done, either by means of better coal, increased grate area, mechanical draught, or mechanical stokers. The best method is to install mechanical stokers, preferably of the inclined underfeed type, with forced draught. By this means 300% of rating may be obtained with but little loss of efficiency.

**Flats on Commutator.**—One of our substations is equipped with two 300 k.w. 6-phase rotary converters which are connected to the secondaries on the same bank of transformers. We have had considerable commutation trouble. These rotaries are operated alternately. Four flat spots 90 deg. apart developed on the commutator on each rotary. Have any member companies experienced similar trouble, and if so, what was found to be the cause?

Wm. Volkmann, Toronto Ry., Toronto.—We have had somewhat similar trouble on our 1,000 k.w. 600-volt railway rotaries, developing either 6 or 12 spots. Your machines are apparently four or eight pole with a black spot for each pole or every other pole. This can be caused by high commutator bars in one spot gradually causing the four spots, high mica, by poor connection in armature, by poor equalizer connections in armature, by poor connections from collector ring to armature, by high resistance short between armature turns caused by dirt, etc. After having repaired or eliminated all or any of the faults noted above, it may be found advisable to undercut the mica in the commutator, so as to eliminate any future trouble from this point.

**Diameter of Car Wheels.**—We are investigating the matter of placing 36 in. rolled steel wheels under our passenger cars in place of the 34 in. wheels. We have four W. H. 93A motors, 50 h.p. each, one K14 controller, pinion 25 teeth, gear 62 teeth, Baldwin interurban trucks, 34 in. rolled steel wheels with 5½ in. axles. (a) What benefit would the change be to us? (b) Would it enable us to keep our cars on schedule time better than at present? (c) Would it take more or less power, and be harder or easier on our power plant and substation? (d) What are the objections to changing from 34 to 36 in. wheels, and also what are the advantages?

G. Gordon Gale, General Manager, Hull

Electric Co., Hull, Que.—(a) Better motor clearance when treads have worn to minimum thickness. (b) If motors are not now working at full load cars would maintain better schedule. (c) It would take more power. (d) Objections are, increased height from ground to first step, increased cost of wheel, increased weight of wheel. The 36 in. wheel would have a longer life.

**Conductors and Refunds.**—What are general instructions to conductors in cases where passengers pay fare twice? For example, passenger tenders 25c. and same is registered and then only three passengers board car; or if five passengers board the car the first pays the fares, and one of the following pays also. In each case a refund is requested.

G. Gordon Gale, General Manager, Hull Electric Co., Hull, Que.—On request of passenger, refunds are made through the office on receipt of full report from conductor. These refunds are of rare occurrence.

**Radius of Curves.**—Very short radius curves are guarded inside and out; (a) What is the minimum radius where the guard on the inside only is necessary? (b) What is the minimum radius where no guard is required at all?

J. G. Smith, Track Superintendent, Toronto Ry.—(a) 40 ft. radius in city practice, 8 ft. to 8½ ft. wheel base. (b) 100 ft. radius in city practice, 8 ft. to 8½ ft. wheel base.

**Special Track Work.**—Under your practice, both from the physical and accounting standpoint, what is the definition of the term "track special work," and what forms of track structure are included thereunder? What are the reasons for such practice?

J. G. Smith, Track Superintendent, Toronto Ry.—Any portion of track wherein two rails cross each other, whether curved or straight, or where two rails meet each other and have to be machined or planed so as to form a junction, and requiring to be bolted, cast, or welded together, may be termed "special track work." This would include turnouts, crossings, single, or any number of curves that required switches, mates, frogs, etc., for the make up of an intersection. The reasons for this practice are: First, for defining exact locations; Second, excessive cost above straight track; Third, enquiry to manufacturers being common practice to denote the above as special track work; Fourth, Accounting Department maintenance charges which are under account numbers.

**Track Tenders' Reports.**—Do curve greasers and track sanders report to the Way or Transportation Department?

J. G. Smith, Track Superintendent, Toronto Ry.—To the Way Department.

**Railway Spike Heads.**—Standard hook head railway spikes, have an angle of 103° made by the body of the spike with the underside of the head. This provides for their use with A. S. C. E. and other rails having a "base angle" of 13°. Most electric railway rails of the girder type have a "base angle of 10°". The following questions then arise: (a) Would there be any gain in the holding power of the spikes if the angle of their heads were changed to 10° to suit the rail angle? (b) If there is an object in making these angles the same for standard T rail work, is it not logical to assume that they should agree in girder rail work, even at the inconvenience of carrying the two styles of spikes in stock?

W. F. Graves, Chief Engineer, Montreal Tramways Co.—(a) Owing to the inaccuracy of driving spikes, the change in the angle of the body of the spike with head of 3° would not, in my opinion, affect the holding power of spike. (b) In theory this is logical, but

in practice the inconvenience of carrying two styles of spikes is very great.

**Rail Corrugations.**—(a) What type of rail and section, whether T or girder, 7, 8, or 9 ins. in depth, have shown least effects from corrugation? (b) What type of substructure is used: Stone, gravel, or cinder ballast; solid concrete; concrete slab; ballast under ties, with concrete between ties? (c) Type of paving?

W. F. Graves, Chief Engineer, Montreal Tramways Co.—(a) T rail of the 7 in. type. (b) Stone, gravel or cinder ballast under the ties with concrete between ties for paving foundation. (c) Brick and granite.

**Tie Rod Construction.**—Is it advisable to use tie rods with the following construction? 7 in. 70 lb. T rail, steel ties weighing 9½ lbs. per foot, 3 ins. high, 7 ft. long, spaced 5 in. centres, concrete base 5 ins.; concrete under ties 6 ins. deep, 18 ins. wide, 1 ft. 6 ins. long; brick pavement between rails and 1½ ft. outside of each rail; single truck cars weighing 20,000 lbs. operated?

W. F. Graves, Chief Engineer, Montreal Tramways Co.—Yes.

**Soliciting Business.** What do you find to be the best method of soliciting passenger, freight and express business, so as to increase earnings? A brief outline of such systems as have been found in practice to be profitable, will be appreciated. C. L. Wilson, Assistant Manager, Toronto & York Radial Ry., Toronto.—By carefully following the possible routes of shipment, and ascertaining from the consignees in the district where your railway serves, the business they are doing and where it originates, and following it up. Our best results, we feel, have been obtained by systematically calling on the consignees along the railway and listening to the complaints and suggestions which they have to offer.

**Fares on Interurban Railways.** Should a larger cash than ticket fare be charged on interurban railways; how should the system be handled? C. L. Wilson, Assistant Manager, Toronto & York Radial Ry., Toronto.—From our experience we feel that the cash fare should be higher than the straight line tickets sold by agents and offices, and as far as possible the greater percentage of the fares collected should be covered by agent and station tickets. Arrangements with storekeepers along the road can be made for a small amount per annum to act as agents for the company.

**Packing of Package Freight.** (a) Are strawboard, fibreboard, or pulpboard boxes, as specified in the official classification, of sufficient strength for goods handled by electric railways, when the diversified character of the load, necessary in single unit distributing cars is considered? (b) Do any member companies publish exceptions covering the handling of glass and glassware when so packed? C. L. Wilson, Assistant Manager, Toronto & York Radial Ry., Toronto.—(a) We do not think they are of sufficient strength or proper. (b) We handle this class of material under the Canadian Freight Classification, which permits of refusal by the railway company if the packing is not considered sufficient, and further, glassware is shipped entirely at owner's risk.

**Advertising Expenses.** What percentage of gross earnings should be appropriated for advertising? C. L. Wilson, Assistant Manager, Toronto & York Radial Ry., Toronto.—The amount which should be set aside for advertising should depend entirely on the class of business and district served. Last year we did not expend one-tenth of 1% of gross earnings on advertising.

**Folding Steps on Old Cars.** Considered from an accident standpoint, does it pay to equip old cars with folding steps? C. L.



Wilson, Assistant Manager, Toronto & York Radial Ry., Toronto.—Providing the old cars could be so altered as to have the steps fold in combination with the doors closing, would consider it advisable.

### Edmonton Property Owners' Association and the Radial Railway.

The Edmonton, Alta., Property Owners' Association has received a report from a committee of five of its members, P. E. Butchart being chairman and F. R. Coutant, Secretary, which was appointed to investigate the operations of the Edmonton Radial Ry., to find out the reasons for the losses sustained, and to offer suggestions as to how these losses might be remedied.

The committee finds that the system consists of 53 miles of line, on which 86 cars are being operated. It is capitalized at something over \$3,000,000. This capitalization is about \$1,000,000 in excess of the capital expenditure on the 71 mile system in Calgary, and about the same amount in excess of the Ottawa system, which has approximately the same mileage and requires 199 cars for its operation. The interest charges amount to \$143,000 and in addition \$170,000 is being provided to bring the capitalization down to a point more closely corresponding to the physical value, for depreciation, etc. No suggestion can be offered on this point, as the expenditures have been incurred, and the charges must be met. One point, however, is referred to, viz., the Highlands extension. This was built under an agreement with Magrath and Holgate and it is claimed that it has resulted in a loss of \$6,000 to the city, partly on capital and partly on operation account. The loss on capital account appears to be due to a lack of definiteness in the agreement, and the loss on operating account appears to be "absurdly low in comparison with the loss per mile shown by the other mileage of the utility."

"It is, however, in matters of maintenance and operation that great savings can and will eventually be made," the committee reports, and observes that apart altogether from charges upon an excessive capitalization "sufficient value is not received" for the expenditure on operation and maintenance. Independently of the depreciation charges the system shows a loss. The total deficit (including capital charges, depreciation, operation and maintenance) in 1914, was \$30,000 in excess of that of 1913, notwithstanding considerable reductions in operating expenses. The committee estimates that the deficit should not have been increased by more than \$3,000 in that period, and adds "We are at a loss to understand the heavy increase."

After reviewing the operation charges under the several headings:—Power, maintenance of ways, structures and equipment, transportation charges and equipment—the committee points out that it costs 24.8 cts. a car mile to operate the line, of which 2,500 is "dead" mileage per month, an increase of 2,400 a month in a year. The expenditures in most departments have increased, and it is shown that during 1914 it cost \$3,065.26 to handle freight from which \$3,012.47 was received, while in 1913, three times as much revenue was received from this source, at the same cost, and in the first three months of 1915, freight receipts were \$1,257.45, while the cost of handling the freight is given as \$55.70.

The committee is of opinion that the amount of power used for the operation of cars is excessive, and could be considerably reduced by more careful instruction of the motormen. It is suggested that by the use of one-man cars on six lines, about \$50 a day could be saved in wages. The car

schedule could be improved in the public interest; the 5c. fare system with transfers is considered inelastic, and it is suggested that consideration be given to the zone system. Some improvements are suggested in connection with the cars, notably a lowering of the high step, which prevents ladies and children boarding them readily; and the use of safety appliances, particularly on the high level bridge, would give people greater confidence and induce more travel.

The committee is of opinion that the system has not been over extended, and concludes by observing that while the March statement shows that considerable economies have been made, further savings could still be made, in the administration and other departments without impairing the efficiency of the system.

Following are the earnings and expenditures for the four months ended April 30, compared with the corresponding period of 1914:—

	1914.	1915.
Passengers carried .....	4,897,008	3,724,023
Gross earnings .....	\$207,397.54	\$185,888.93
Gross expense .....	298,533.95	236,164.93
Surplus on operation ....	18,289.11	48,489.58
Total deficit including fixed charges and depreciation .....	91,136.41	50,275.90

### Jitney Regulation Required in Toronto.

The Toronto Mail and Empire says:—"In most American cities where the jitney has appeared it has been found necessary to regulate it. In this city the jitney is not only competing against the street railway company and the taxicabs, but it is competing against the citizens. Since the city of Toronto receives one dollar out of every five that the Toronto Railway collects the city is losing one dollar out of every five that the jitney service wins from the company's service. In other words, out of every five jitneys one is engaged exclusively in depriving the city of Toronto of revenue, and is doing its share to increase the rate of taxation. Should the industry grow to sufficient proportions it might materially reduce not only the gross amount that the Toronto Ry. Co. is obliged to pay to the city of Toronto, but the percentage as well. On this account the citizens have a special reason for regulating the jitneys, which, while they are no doubt supplying a public demand for cheap and rapid transportation, are doing so to some extent at the expense of the taxpayer.

"Another reason for their strict regulation lies in the fact that some of the drivers are persons from whom an action at law for damages might fall to obtain redress. A jitney driver who ran down and injured a pedestrian might be sent to jail if criminal negligence could be proved, but how many of them are men of sufficient substance to financially indemnify those whom they might injure? Since so many of the jitney cars are old ones, it is all the more necessary that they should not be unduly crowded, and that passengers should not be permitted to sit on the doors, and thus run the risk of serious harm. The jitney driver depends upon proceeding at a high rate of speed for his living. The faster he goes the more money he makes. It will be seen, therefore, that his interest is not exactly identical with the interest of the great majority of citizens who do not patronize the jitneys and who may be imperiled by their operations."

The first convention of the Brotherhood of Railway Signalmen of America to be held in Canada took place at St. Thomas, Ont., June 17, where the only lodge of the order is located. W. J. Pettit, La Salle, Ont., was elected Grand Chief Signalman for the current year.

### Proposed Absorption of Halifax Electric Tramway Company.

Halifax, N.S., press dispatch, June 16.—The Nova Scotia Tramways and Power Co. took the first step today to carry into effect the legislation enabling the company to take over the Halifax Electric Tramway Co.'s properties and the Nova Scotia Light and Power Co.'s hydraulic powers on the Gaspereau. The granting of the charter was strongly opposed by the City of Halifax. The step now taken comes in the form of a petition to the Board of Public Utilities Commissioners, which was filed today, asking for permission to proceed. The Legislature provided, in granting the charter, that before anything was done the consent of the Public Utilities Commissioners must be obtained. A public hearing on this petition will be held on July 7th.

The petition asks that the capital of the company be increased to \$10,000,000; that \$5,000,000 first mortgage 30-year gold bonds be issued at 5%, \$3,000,000 to be presently issued, and the balance of the future requirements only to be issued against 80% of expenditures on capital account when the earnings of the company for the fiscal year preceding any proposed issue have been at least one and three quarters times the net charges on the bonds already issued and on those proposed to be issued, and when such issue is approved by the Public Utilities Commissioners. The petition also asks the board to approve of \$3,000,000 par value of said bonds, 32,500 shares of preferred stock and 62,500 shares of ordinary or common stock, to the order of the Nova Scotia Light and Power Co. The petition is followed by schedules giving a description of the Halifax Electric Tramway Co.'s property and plant, of the power sites, lands and privileges on the Gaspereau River, a description of the equipment of the cost of development of the Gaspereau made by J. G. White and Co. of New York, which is placed at \$1,534,960.

The offer of the Nova Scotia Tramways and Power Co. states that the net earnings will be sufficient to pay between 5 and 6% on \$12,500,000.

### Interurban Cars for Toronto Suburban Railway.

The Toronto Suburban Ry. has ordered 6 interurban cars for its new Toronto-Guelph line that will be a novel departure in interurban rolling stock in this country. They will be of the centre entrance type, of steel frame construction throughout, it having been decided that this type offers distinct advantages for interurban service. The principal point of advantage lies in separating the baggage compartment entirely from the main passenger section of the car, at the front or motorman's end, it not being necessary for passengers to pass through or around this section as is usual in the end entrance type of car.

The cars will be about 59 ft. long, with seating accommodation for about 70, according to the present tentative plans, although it is possible that these dimensions will be altered, as it is desired that the maximum weight of car be limited to 75,000 lbs. They will be designed for single end operation, with the baggage compartment just back of the motorman. Between that point and the centre of the car will be the smoking compartment, with the rear half of the car for the main passenger section. The rear of the car will be rounded, forming a kind of observation end. They will be equipped with four 80 h.p. motors, but the type of truck has not been determined. The car bodies will be built by the Preston Car and Coach Co.



## Canadian Electric Railway Association's Annual Meeting.

The annual meeting held at the Chateau Laurier, Quebec, June 21 and 22, was attended by officials of member companies throughout the Dominion and was very successful in every way. The chair was occupied by the President, C. B. King, Manager, London St. Ry., who opened the meeting with an address.

The Secretary-Treasurer, Acton Burrows, Managing Director, Canadian Railway and Marine World, presented a very comprehensive report dealing with the Association's work during the past year and covering a wide range of other subjects including the following: Membership; representation at American Electric Railway Association's convention; representation of electric railways on Government maps; compensation for transportation of postmen; customs duty on continuous rail joints; workmen's compensation acts; Ontario legislation respecting electric railways; hydro electric railways for Ontario; responsibility for watchmen at steam railway crossings; Toronto Suburban Ry. Co.'s appeal granted by British Privy Council; judgment in the Vancouver bridges case; speed of cars in cities; automobiles passing standing electric cars; public utilities commission for Alberta; Manitoba's Public Utility Commissioner tells why electric railways cannot be extended or fares reduced; standard specifications for steel rails; inquiries for information from non member companies; transportation of postal mail; transportation of baggage, parcels, etc.; transportation of newspaper representatives; transportation of soldiers on electric railway cars; comparative gross earnings of electric railways; data respecting street railway traffic; percentage payments to cities; contracts for advertising in cars; wages of employees; accident liability, insurance and workmen's compensation acts; use of pilots on cars on city streets; use of trolley rope retrievers or catchers; lavatory arrangements on interurban cars and at stations; jitney automobiles. The whole of the first morning session was devoted to the reading of the report and its discussion.

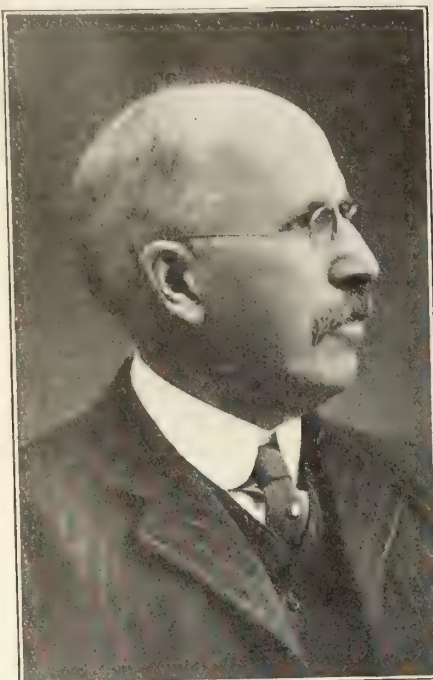
The question of the requirements of the Ontario Government in regard to returns for taxation purposes was introduced by J. D. Fraser, Director and Secretary-Treasurer, Ottawa Electric Ry., and fully discussed.

W. F. Graves, Chief Engineer, Montreal Tramways Co., as chairman of the special committee on the proposed standardization of steel rails for electric railways, presented a very comprehensive report which was referred to the incoming executive committee and will be again taken up by the Association with a view of securing uniformity of practice.

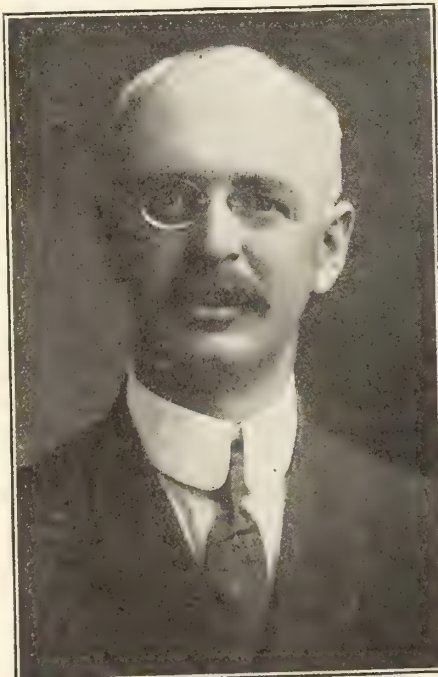
The following copyrighted papers were read: "Development of tourist traffic on observation cars," by R. M. Reade, Superintendent, City Division, Quebec Railway, Light, Heat & Power Co.; "A proper accident department," by C. L. Wilson, Assistant Manager, Toronto & York Radial Ry.; "Jitney competition," by E. P. Coleman, General Manager, Dominion Power & Transmission Co.; "Coasting," by A. Gaboury, Superintendent, Montreal Tramways Co.; "Economy in the electric railway repair shop," by E. A. W. Turbett, Mechanical Superintendent, Quebec Railway, Light, Heat & Power Co.; "Methods to minimize fire risks and secure reductions of premiums," by J. H. Ryan, New York. As above mentioned these papers are copyrighted and will be printed in the Association's annual proceedings and distributed to officials of member companies.

Officers, etc., were unanimously elected as

follows: President, James D. Fraser, Director and Secretary-Treasurer, Ottawa Electric Ry.; Vice President, E. P. Coleman, General Manager, Dominion Power & Transmission Co.; Honorary Secretary-Treasurer,



**James D. Fraser,**  
Director and Secretary-Treasurer, Ottawa Electric Ry. Co., and President, Canadian Electric Railway Association.



**E. P. Coleman,**  
General Manager, Dominion Power and Transmission Co. Ltd., and Vice President, Canadian Electric Railway Association.

Acton Burrows, Managing Director, Canadian Railway and Marine World, re-elected for the ninth consecutive year; Executive committee: A. Eastman, Vice President and General Manager, Windsor, Essex & Lake Shore Rapid Ry.; A. Gaboury, Superintendent, Montreal Tramways Co.; H. G. Matthews, General Manager, Quebec Railway,

Light, Heat & Power Co.; M. N. Todd, President, Galt, Preston & Hespeler St. Ry.; C. L. Wilson, Assistant Manager, Toronto & York Radial Ry.; Assistant Secretary, Aubrey Acton Burrows, Business Manager, Canadian Railway and Marine World.

The officials of member companies attending the meeting were given every opportunity of thoroughly inspecting the Quebec Railway, Light, Heat & Power Co.'s unique system. On the afternoon of the first day they were taken by special car over the suburban line to Ste. Anne de Beaupre, which is operated by both electricity and steam, and which last year carried over 2,000,000 pilgrims to the shrine. On the return journey one of the company's power houses at Montmorency Falls was inspected. On the afternoon of the second day they were taken over the company's city division in a special observation car and had every opportunity of carefully studying the successful operation of a line handicapped by narrow streets and heavy gradients, and inspection was made of the St. Malo car barns. The officials of the Quebec Railway, Light, Heat & Power Co., especially H. G. Matthews, General Manager; R. M. Reade and J. A. Everell, Superintendents; W. J. Lynch, Treasurer and Comptroller; L. Burran, Chief Electrical Engineer; P. Hamel, Secretary, and C. J. Pigot, Maintenance of Way Engineer, were very attentive to the visitors, furnishing all information in their power and doing everything possible to make the meeting a most successful one.

## The Electric Railway Situation in Toronto.

R. C. Harris, Commissioner of Works, has reported to the Committee on Works that it is expected to lay the report of a special investigation into the proposals for rapid transit in Toronto before the City Council, by Nov. 1, and until this is done he considers it would be unwise to project additional civic street railway lines.

The particular matter calling forth this report was the projected lines on Annette St., and Pacific Ave., West Toronto, within the area over which the Toronto Suburban Ry. holds the franchise. The construction of these lines was ordered by the Ontario Railway and Municipal Board, and the company expressed its willingness to abandon its franchise over these streets if the city would not require the enforcement of the order. This matter is being considered by the City Counsel's department and deputations have waited upon the Commissioner to argue both for and against the building of the lines. The Commissioner expressed the opinion that the governing consideration as related to conditions in West Toronto is that of rapid transit rather than local accommodation. This question of rapid transit is being considered by the Chief Engineers of the Hydro Electric Power Commission of Ontario, and of the Harbor Commission and the Commissioner of Works, with a view of co-ordinating the electrical railway projects for which Ontario Hydro Electric Power Commission is responsible, with the requirements of the Harbor Commission, and the needs of the city, having in mind the acquisition by the city of the Toronto Ry., when its franchise expires in 1921. The report upon this matter is that to which the Commissioner of Works refers.

**Canadian Society of Civil Engineers.**—A branch has been organized at Regina, Sask. The officers for the current year are,—Chairman, O. W. Smith; Secretary, L. W. Wynne-Roberts; executive committee, A. J. McPherson, F. McArthur and I. N. DeStein.



## The Jitney Automobile Situation.

The jitney situation on the United States Pacific Coast is stated to be having a hard fight for its existence and to be slowly but surely on the decline. The reason for this is stated to be the new type of motor bus which is being put on in many cities and which is reported to be more economical in its operation than automobiles. Another reason for the decline of the jitney is the regulations which have been put in force all over the country which have resulted in the elimination of irresponsible drivers, and the poorer class of vehicles, and are regulating the routes operated and the number of passengers carried. The New York State Legislature has passed a law authorizing the regulation of the traffic, and under it the cities of Syracuse, Utica and Schenectady have passed bylaws. The putting in force of these regulations has brought about the removal from the streets of all unlicensed cars, in Schenectady. In Syracuse the license rates run from \$75 for a five passenger car, to \$200 for a 16-passenger car, while the bonds required run from \$10,000 for the five passenger cars to \$20,000 for the 16-passenger cars.

In Canada, while there was an increase during June in the total number of jitney cars being operated in the different centres, there are indications that with the strict enforcement of the regulations, which have been passed in some places, considerable numbers of jitneys are being taken off the service on the better travelled routes, and are being used in an endeavor to open up new routes. There does not appear to be any extension of the traffic in Quebec and other eastern provinces, while in Ontario the area within which the jitneys are operating is increasing, although in Toronto, the jitney traffic, particularly along Yonge St., is not so dense as it was a month ago. A larger number of routes are being operated, and there are also a number of irregular jitneys operating without any regular schedule. The City Treasurer is reported to have said that the loss of revenue to the Toronto Ry., and consequently to the city, is not entirely due to the jitney traffic, an opinion in which the Toronto Ry. management agrees. City officials have had men engaged in collecting statistics of the jitney traffic, but these are not yet available for publication. The information, however, has been given to the Police Commission, which regulates the traffic. As a result a bylaw has been drafted which was given two readings at the meeting of the City Council, June 14. The license fee was fixed at one dollar a month and the other regulations require that a seat be provided for each passenger carried; that no one shall sit on the sides of, or stand up in the cars; that drivers shall be prohibited from smoking when carrying passengers; that the jitney shall be kept clean and in good condition; that the council shall set apart stands at the terminal points of the jitney routes, and that a bond of \$1,000 shall be put up by each owner.

On June 15 application was made to the Toronto Board of Control on behalf of A. B. McBride for permission to operate motor buses in the city. A list of 13 routes was given, and an agreement was asked for. The Chief Constable saw no objection to the operation of the buses, but a joint report from the City Solicitor, the Chief Constable, and the Commissioner of Works said:—"The application seems to contemplate an agreement extending over a period of years, and practically an exclusive franchise or right to operate motor buses. In other words, the company wishes an agreement as to time, and also to prevent opposition. This, we think, the city is not in a position to give.

If anyone chooses to inaugurate a system of transit by means of motor buses, properly licensed and regulated, there is nothing to prevent this being done at any time; but the city cannot enter into an agreement and afford protection either as to the length of the franchise or freedom from opposition without complying with the restrictions above quoted." The Board decided to adjourn the consideration of the matter.

The Toronto Jitney Association has been incorporated under the Ontario Companies Act, with an authorized capital of \$40,000 to deal in automobiles and to operate the same in the transportation of passengers and freight, the provisional directors being:—G. Gregory, A. Trowther and J. W. Bicknell.

In the vicinity of Toronto, in addition to the routes mentioned in our last issue as being served by jitneys, a service is being given along the Lake Shore Road to Long Branch, paralleling the Toronto and York Radial Ry., and from West Toronto to Weston, competing with the Toronto Suburban Ry. The Toronto Jitney Association has started a route to Balmy Beach.

In Belleville, Ont., Belleville Jitneys, Limited, with S. E. Carman, S. R. Burrows and C. R. Burrows as provisional directors, has been organized, and some cars are being operated. A jitney service is being operated between Oakville town and the G.T.R. station there, which is a convenience to "commuters." At a recent meeting of the Hamilton City Council's Legislative Committee arrangements were made with the local jitney association for the further regulation of the traffic. In the course of the discussion it was stated that the most profitable routes for jitney traffic are King and Barton Streets, while no profit is made on the route on Main St., and that the running expenses are 7½c. a mile. A jitney service was started in London, Ont., Jan. 5, under the management of C. Swayzie, which is catering principally for the military traffic. A suggestion at the city council, June 15, to draw up a bylaw to regulate the traffic was not favorably received.

At the Brantford City Council, July 14, the suggestion was made that the city should operate jitneys to and from West Brantford, and other points not reached by the municipal railway.

Up to May 31, the Manitoba Government had issued licenses for 6,700 automobiles, and there are also about 700 motor cycles in the Province. The increase in the number of auto licenses issued is stated to be almost entirely due to the jitney traffic, owners having sold their old cars to chauffeurs for use as jitneys and to have bought new cars. The working of the new traffic bylaws has been watched by the police, and some minor amendments were decided upon, June 9, the most important of which is that autos not being used for hire may stand within a certain restricted area, from which they were excluded under the bylaw. Recent reports state that there are 572 cars being operated in Winnipeg, of which 428 have been licensed under the jitney bylaw.

The Trade and Labor Council at Saskatoon, Sask., while of opinion that the city's electric railway could give better service to the public, has called upon all union men to patronize it rather than the jitneys; while the Trades and Labor Council at Regina, Sask., has expressed the opinion that the coming of the jitney there will have done some good if it brings about an improvement of service upon the municipal railway.

At Calgary, Alta., a bylaw has been drafted fixing \$5 a year per 18-in. seat as the license fee, and \$2,500 for three cars, and \$5,000 for more than three cars, as the

amount of the bond to be entered into before a license can be issued. It also authorizes the commissioners to name the streets on which jitneys may or may not be operated, to define the routes to be followed, and to generally regulate the traffic. At present the only jitney traffic is from the end of the municipal railway to the military camp at the Sarcee Reserve.

Prior to the putting in operation of the "tango" 8 for 25c. no transfer tickets by the British Columbia Electric Ry. there were 664 cars operating under jitney licenses in Vancouver. With this and the putting in force of the city bylaw necessitating the filing of bonds, this number has been reduced to about 250 cars, of which about one half are operating independently of the association. The motor traffic in the city has heretofore been regulated under bylaw 952, which has been amended and extended by the passing of bylaw 1218, since the new legislation respecting jitney traffic was passed. The two bylaws as consolidated, have been published in pamphlet form. There are 60 regulations. The schedule fixes the license fee at \$25 for a seven passenger car, \$50 for larger cars, and \$2 for the driver. Drivers are to be examined and cars are to be inspected before licensing by the Inspector of Motor Vehicles, who may appoint assistants to see that the cars used for hire shall be kept clean, dry and in good repair. The regulations also provide for the conduct of drivers when in charge of motors, the number of persons to be carried, the point on the streets where they may be stopped, the sign to be carried on the cars, and for the closing of the right hand doors, so that passengers must enter and alight by the left hand door. Provision is made for the hearing of complaints for breach of regulations for which the council may suspend licenses. The bond required to be filed is to the extent of \$1,000 for an individual claim, and of \$5,000 for a group of claims arising out of any one accident.

A jitney service has been organized at Vernon, B.C., in connection with the military camp there.

## The Montreal Tramways Franchise Question.

The Montreal Board of Control decided, on June 8, to write to the company asking whether it would build the various lines necessary to provide increased accommodation on the city guaranteeing the cost of the lines, and to provide for the cost of their operation. This resolution was passed on motion of Controller Duncan McDonald, ex-General Manager of the Montreal Tramways Co., who argued that as the company could not build the lines owing to the difficulty of raising money in the face of the short life of the present franchise, it might possibly do so if the city guaranteed the money. President Robert replied, June 10, that the proposal submitted could not be entertained by the company, etc. The matter came up again for consideration by the Board of Control, June 11, but was adjourned. (June, pg. 229.)

**A Jitney Decision in Illinois:**—The Illinois Public Utilities Commission held jitney busses to be public utilities. Ruling in the case of the Jacksonville St. Ry., against the L. F. O'Donnell Transportation Co., Commissioner O. P. Thompson held that jitneys render a public service such as to bring them under the intent of the utilities law and that they must incorporate and seek certificates before operating. The commissioner also ruled jitneys may not operate along streets where they become a parallel competition to a railway.



### Electrification of Schomberg and Aurora Railway.

The Schomberg and Aurora Ry., a subsidiary of the Toronto and York Radial Ry., is being electrified. It is 15 miles long, extending from Schomberg, Ont., to a junction with the T. & Y.R.R. at Yonge St., near Bond Lake, about 4 miles south of Aurora, and has been operated by steam power. The rolling stock consists of a steam locomotive, 2 passenger cars and 15 flat cars.

The S. & A.R. Co. was incorporated by the Dominion Government in 1896 to build and operate a line from a point on the G.T.R. Toronto-North Bay line, between King and Newmarket, to or near Schomberg. This power was exercised shortly after and the line constructed. The Dominion Parliament in 1900 further empowered the company to extend its line southeasterly to Oshawa, and northwesterly through Shelburne to Durham, but this was never proceeded with. The latter act also gave the company power to enter into an agreement with the T. & Y.R.R. (then the Metropolitan Ry.), to convey or lease its line. In 1904 the T. & Y.R.R. purchased the line.

The electrification will be similar to that of the T. & Y.R.R., for which it will form a feeder. The trolley will be a 4-0 round copper wire, with a 4-0 feeder. Power will be delivered to the line at the line voltage of 600 volts from the Bond Lake substation. T. & Y.R.R. rolling stock will be used. The work is being done by the T. & Y.R.R. line crew in its spare time, no extra forces being employed on the work.

### Jitney Regulation in New York State.

The New York State Legislature has passed an act to amend the transportation corporations law, in respect to stage routes, bus lines and motor vehicles carrying passengers for hire in cities.

"The laws of 1909, chap 219, sec. 25, are amended to read as follows:

25. Additional persons and corporations subject to the public service commissions law. Any person or any corporation who or which owns or operates a stage route, bus line or motor vehicle line or route or vehicles described in the next succeeding section of this act wholly or partly upon and along any street, avenue or public place in any city shall be deemed to be included within the meaning of the term 'common carrier' as used in the public service commissions law, and shall be required to obtain a certificate of convenience and necessity for the operation of the route or vehicles proposed to be operated, and shall be subject to all the provisions of the said law applicable to common carriers."

The following section is added to article 4 of said chapter as follows:

"26. Consent required. No bus line, stage route nor motor vehicle line or route, nor any vehicle in connection therewith, nor any vehicles carrying passengers at a rate of fare of 15 cts. or less for each passenger within the limits of a city or in competition with another common carrier which is required by law to obtain the consent of the local authorities of said city to operate over the streets thereof shall be operated wholly or partly upon or along any street, avenue or public place in any city, nor receive a certificate of public convenience and necessity until the owner or owners thereof shall have procured, after public notice and a hearing, the consent of the local authorities of said city, as defined by the railroad law, to such operation, upon such terms and conditions as said local authorities may prescribe, which may include provisions covering description of route, rate of speed,

compensation for wear and tear of pavement, improvements and bridges, safeguarding passengers and other persons using such streets, and no such operation upon the streets of any such city shall be permitted until the owner or operator of such vehicles or proposed line or route shall if required by such local authorities have executed and delivered a bond to such city in an amount fixed by said local authorities and in the form prescribed by the chief law officer of said city with sureties satisfactory to the chief fiscal officer of said city, which bond may be required to provide adequate security for the prompt payment of any sum accruing to said city, and the performance of any other obligations, under the terms and conditions of such consent, as well as adequate security for the payment by such owner of any damages occurring to, or judgments recoverable by, any person on account of the operation of such line or route, or any fault in respect thereto."

### Winnipeg Electric Railway Protests Against Jitney Competition.

Wilford Phillips, Manager and acting Secretary, Winnipeg Electric Ry. wrote the City Clerk of Winnipeg recently as follows: "I am instructed by the directors to inform the city council of the position taken by this company with reference to the attitude of the council towards the jitneys as a means of transporting passengers along the streets and highways of the city in competition with this company. In the first place, we contend that the attitude of the council is a violation of the contract entered into with us in pursuance of city bylaw 543, whereby we were given for valuable consideration exclusive rights for our transportation system on the city streets. In the next place, the competition is extremely unfair. The money invested in this undertaking was so invested on the faith of the contract we have referred to and many onerous terms were imposed, in the way of paying 5% of our gross revenues to the city, an annual car tax on rolling stock, cost of pavements and taxes upon property. The city is now permitting competition by parties who have practically no capital invested, and whose only object is to make a little ready money temporarily. There is no doubt that this competition is being allowed by the city. Naturally the British capitalists who have their money locked up in Canada look to the local authorities for protection. Considerably more than half the capital invested in the street railway system here is British money. One of the problems the city has to face at the present time is that there is no British capital coming in for investment. When conditions change, unless during this strenuous period the capital already in the country has been protected, it will be very difficult indeed to get more in. If this competition is allowed to continue the company will necessarily be compelled to cease making further extensions, and indeed will find it difficult to obtain capital. This would not be a good thing for the city at large. I do not suppose it is necessary to point out also the interest the city has in the success of our undertaking. No doubt it fully appreciates that without comment upon our part. The same remarks I suppose would apply to the council's duty to the public to protect them against the dangers occasioned in the operation of cars by irresponsible and unfit persons. If the city expects this company to maintain adequate service (and prevent still further reduction of the present service) the city will be obliged to do its part and eliminate unfair competition."

### Canadian Autobus Company's Offer to City of Montreal.

The Canadian Autobus Co. advised the Montreal Board of Control, June 22, through its Secretary, G. Renaud, that it had been experimenting with various types of busses and had finally approved of one tested in the city recently. It proposes to build these cars in Montreal and place them in service if an arrangement can be made under which the city will guarantee the company's bonds for \$3,000,000, upon the understanding that the service is to be inaugurated within 12 months, and half the profits paid into the city treasury.

The company's estimated income is shown in a table presented in the letter. The daily run of an autobus is placed at 150 miles, and the service, which would be operated by 300 busses, would therefore cover 45,000 miles a day. Allowing five passengers to the mile, this would mean 225,000 passengers a day. At 5c. each the passengers would contribute \$11,250 daily. Allowing 21c. a mile for expenses, the daily cost of operation would be \$9,450, leaving a net profit of \$1,800 daily, or \$3,375,000 for a year of 300 days. The net profit works out at \$540,000, of which the city's share, one-half, would be \$270,000.

Under the contract between the city and the company dated Aug. 22, 1912, the city was to receive shares in the company, and the present proposition is made with a view of getting out of any legal entanglements which might ensue between the city and the Montreal Tramways Co., through the city holding shares in the Autobus Co. The letter concludes: "It is understood, of course, that this proposition is made without prejudice to our contract still in existence with the city, but we desire you to notice that the acceptance of our offer would place the city in a position to give almost immediately a satisfactory service to distant wards such as Emard, Cote des Neiges, Ahuntsic and Bordeaux and others, which are to-day compelled to pay higher fares than other sections of the city."

### Wages on the Toronto Railway.

The employees are negotiating with the company in connection with a new agreement to take the place of the one signed in 1912 for three years, and which expired June 16. At a meeting of the men it was decided to ask for an all round increase of 1/2c an hour, and some other requests were made for a change of certain conditions, which the men claimed would not affect the company in any way financially. Eventually it was decided to drop these requests, and intimate to the company that the men were willing to accept the old agreement for a further two years. In response to this the Toronto Ry. management stated that it was thought the agreement might be renewed for three years. At the time of writing (June 25) no decision appears to have been reached, but the men's agent is reported to have stated that if the two year extension is not accepted by the company, an application will be made for a board of conciliation to settle matters on the original proposition for an increase of 1/2c an hour. The present rates of wages are: Motor-men and conductors first year 23 1/2c, second year 25 1/2c, third year 27 1/2c; shed men, foreman 27 1/2c, assistant foreman 24 1/2c, motor and truck repair men, first year 23 1/2c, second year 25 1/2c, third year 27 1/2c, and 4c an hour extra for Sunday work. The men pay for their uniforms the first year, pay half the second year, and thereafter are supplied free.



## Electric Railway Projects, Construction, Betterments, Etc.

**Brantford Municipal Ry.** The building which was utilized as a power house by the Brantford St. Ry. Co., immediately east of the G. T. R. Colborne St. Station, has been entirely refitted and is now being used as the general office of the Brantford Railway Commission and the City's Hydro Electric Commission, jointly under the management of L. G. Ireland.

The Eagle Place loop line has been completed and cars are being operated over it. (May, pg. 190.)

**Calgary Municipal Ry.**—The city commissioners of Calgary, Alta., have under consideration the building of a temporary line, 1.50 miles, towards the military camp on the Sarcee Indian Reserve. The material is on hand, and the labor cost is estimated at \$800. A motor bus line is being operated to the camp, but is not sufficient to cope with the traffic. The construction of the temporary line would also enable the city to handle the traffic more expeditiously than at present. It is estimated by T. H. McCauley, Superintendent, that the revenue from the line would average \$50 five days a week, and \$100 a day on Wednesdays and Sundays. (April, pg. 147.)

**Hydro Electric Power Commission of Ontario's Electric Railways.**—At a meeting of the Essex Hydro Electric Radial Association, recently, a resolution was passed pledging the association to use all legal means to prevent extension of franchises and charters to electric railway companies, and making this one of the principles of the association's constitution. Each municipality pays a fee of 50c per 1,000 of population and sends two delegates to the annual meeting. Officers for the current year are:—President, A. W. Jackson, Mayor of Windsor; First Vice President, C. H. Montreuil, Reeve of Ford City; Second Vice President, M. Swartman, Leamington; Third Vice President, G. J. O'Neill, Sandwich South; Fourth Vice President, J. B. Ducharme, Belle River; Secretary, H. R. Hatcher, Walkerville; Treasurer, W. R. Woollatt, Walkerville. (June, pg. 227.)

**London St. Ry.**—We are officially advised that the company is rebuilding its single track on Ridout St., from Horton St. to Garfield St., 4,000 ft., and repaving the track allowance. The track will be relaid with 80 lb. A. S. C. T rail, supplied by the Algoma Steel Co., and a single track Y, of 108 lb. rail. Some other track renewal work will be undertaken if the city council decides upon paving the streets. C. B. King, London, Ont., is Manager. (Mar., pg. 108.)

**Moncton Tramways Electricity and Gas Co.**—We are officially advised that it is expected to build about a mile of track from Main St. on Bonaccord St. to John St., to Union to Church St. extension at an early date, for which rails and ties will be required. Orders have been given Canadian Steel Foundries, Montreal, for switches, frogs, etc., for the double track work at the Main St. subway under the Intercolonial Ry. (June, pg. 229.)

**Montreal and Southern Counties Ry.**—The company is proceeding with the construction of its extension from St. Cesaire to Granby, Que., 16 miles. It is proposed to build a substation and car barn at Granby. Tenders have been invited for all necessary overhead material and bonds, and also for a 400 k. w. motor generator set, and other equipment for the substation. (May, pg. 190.)

**Montreal Tramways Co.**—We are officially advised that the company is building 1.1 mile of new track, and reconstructing a like

mileage on Notre Dame St., between First Ave., and Dominion Park, changing the location, so that when the new road is established by the city, the track will be in the centre of the road, instead of on the north side as at present; and is also reconstructing and extending the line between Dominion Park and Bernard Ave., approximately 4.3 miles of single track. The company has just completed the work of extending about one mile of single track from the Y at Bernard Ave. to the westerly limits of Montreal East, which work was started towards the end of 1914. During 1914 the company constructed approximately eight miles of single track in the municipalities of Montreal East and Pointe aux Trembles. All this track is of the company's no. 1 standard type, with the exception that the rails being used at present in the reconstruction and extension work are no. 87 L-399 section, while that used in the extensions in Montreal East and Pointe aux Trembles was no. 80 A.S.C.E. section. J. E. Hutcheson is General Manager. (June, pg. 229.)

**Niagara, St. Catharines and Toronto Ry.**—We are officially advised that the company proposes to build a station at Niagara-on-the-Lake, Ont., the terminus of its line from St. Catharines to the mouth of the Niagara River. E. F. Seixas, St. Catharines, Ont., is General Manager.

The new station at Niagara-on-the-Lake will consist of a station building 47 x 25 ft., with an open shed 48 x 20 ft., making a total length of 95 ft. by 20 ft. wide, with an overhanging roof 4 ft. The exterior of the building will be stone up to 5 ft., the balance being shingle construction, while the open shed will be carried on pillars resting on stone pedestals 5 ft. high. The interior of the station building will be finished with oak wainscoting 4½ ft. high, with metallic sidewalls and ceiling. This portion of the building will be divided into three apartments, waiting room, 20 x 25 ft.; ticket office, 20 x 15 ft.; and baggage room, 20 x 12 ft. The building is expected to be completed early in July.

**Ottawa and St. Lawrence Electric Ry.**—An order for the winding up of the Ontario and St. Lawrence Construction Co., which was formed for the building of the O. and St. L. E. R., was made at Osgoode Hall, Toronto, June 2, on the application of J. H. Rogers. G. T. Clarkson, Toronto, was appointed interim liquidator.

**Ottawa Electric Ry.**—Work was started June 6 on the pavement renewal work on Bank St., Ottawa, the Somerset and Britannia cars being temporarily rerouted. Particulars of the track work to be done were given in our last issue. (June, pg. 229.)

**Peterborough Radial Ry.**—We are officially advised that the Peterborough, Ont., City Council contemplates doing some new paving work which will necessitate certain changes in track. Nothing definite has been settled about the work, its extent or when it will be undertaken by the city. (Dec., 1914, pg. 558.)

**Regina Municipal Ry.**—The extension proposed to be built on Young St., Regina, Sask., is for freight service only, and connects the track leading to the city's new electric light and power plant with the C. P. R., in order to enable the city to handle cars of coal and other materials to and from the power house. The piece of track will be 3,500 ft. long, and will be laid on Young St., from 16th Avenue to Arcola St. The freight will be moved on the line by the city's motor haulage car. The estimated cost of the line and other work proposed to be done in connection with

the system is \$75,000. D. W. Houston is Superintendent. (June, pg. 229.)

**Sandwich, Windsor and Amherstburg Ry.**—We are officially advised that the company is constructing a second track on 0.66 mile of track in Sandwich, Ont.; and is paving and renewing a mile of track in Sandwich, and 0.25 mile of track in Amherstburg. Jas. Anderson, Windsor, Ont., is Manager. (June, pg. 229.)

**Sarnia St. Ry.**—We are officially advised that the company expects to start work at an early date with an extension of track from the corner of Christiania and St. Clair Sts., to Clifford St., and west along Clifford St., 0.5 mile. For this work the company is in the market for half a mile of rails, trolley wire, ties, etc. G. E. Wadland, Sarnia, Ont., is Manager and Secretary Treasurer. (Sept. 1914, pg. 554.)

**St. John Ry.**—In connection with the track renewal work at the corner of Princess and Sydney streets, St. John, N. B., some differences arose recently between the company and the city respecting the use of T rails, and it was subsequently agreed that the T rail might be used instead of the grooved rail, if concrete were used between the rails.

**Transcona, Man.**—The agreement with J. H. Kern for the building of an electric railway in the town having been disposed of, the Town Council is now in a position to consider the applications of W. J. Christie, and H. W. Adcock of Winnipeg for franchises, to negotiate with the Winnipeg Electric Ry., or to consider the building of a municipal railway, which is being advocated. (June, pg. 234.)

**The Transcona, Man., Town Council,** on June 10, expressed an opinion favorable to the proposition of H. W. Adcock, Winnipeg, for the building of a line from Winnipeg to Transcona. A 25-year franchise is being asked; the line to be built to Transcona by October and extended to the south side of the town by the spring of 1916. Gasoline is the motive power proposed. Cars similar to those in use at present between Lac du Bonnet and Point du Bois to be used. (June, pg. 234.)

**Toronto and York Radial Ry.**—We are officially advised that it is proposed to electrify the Schomberg and Aurora Ry., which extends from near Bond Lake, on the company's Metropolitan Ry., to near Lldoytown, Ont. Part of the material necessary for the purpose has been ordered.

**Windsor, Essex and Lake Shore Rapid Ry.**—We are officially advised that paving on the company's line in Windsor and Essex, Ont., is being done, and that in connection with this there will be some track renewals. Orders have been placed for a supply of oak ties. A. Eastman, Kingsville, Ont., is Vice President and General Manager.

**Winnipeg Electric Ry.**—We are officially advised that the company is making a one mile extension of its tracks on Marion St., St. Boniface, Man., for the purpose of giving a service to the Union Stock Yards, and has under consideration the renewing of half a mile of track on Osborne St., from Kylemore Ave. to River Park. Wilford Phillips is Manager. (June, pg. 229.)

**The Dorchester Electric Co.'s plant and franchises** were advertised for sale by auction, June 30, by the Royal Trust Co., on behalf of the bondholders. The Shawinigan Water and Power Co. is reported to be the owner of the majority of the bonds, and the sale is being made in order to simplify the reorganization of the company's affairs.

The London St. Ry. is having a number of its old cars remodelled at Preston, Ont., for p.a.y.e service.



## Electric Railway Notes.

The Regina Municipal Ry. ordered 28 headlights recently.

The Sandwich, Windsor & Amherstburg Ry. is in the market for 2 single truck p.a. y.e. cars.

The Halifax Electric Tramway Co. has ordered 6 closed city cars, 21 ft. long, from the Nova Scotia Car Works, for delivery by the end of September.

The Port Arthur, Ont., Electric Ry.'s north belt line was started on June 14 to be operated in either direction instead of one way only as formerly.

The British Columbia Electric Ry. started its observation car service in Vancouver, June 17, putting in operation a 25c fare instead of the 50c one charged in previous years.

A conference was held at Brantford, Ont., June 15, between G.T.R. and Brantford Municipal Ry. officials respecting the interchange of traffic at Blue Lake on the B. M. R.'s Grand Valley section.

The Halifax Electric Tramway Co. has ordered 6 closed street cars from the Nova Scotia Car Works. They will be 21 ft. long inside, 30 ft. long over all, mounted on single trucks with 8 ft. wheel base.

The Hamilton St. Ry. has inaugurated a special car service on Sundays to connect with the Canada Steamship Lines steamboats, which now run between Toronto and Hamilton on Sundays.

The Winnipeg Electric Ry. proposes to substitute a 5c. fare on its line in West Kildonan, in place of the 2c. a mile rate now in force. The municipal council is protesting to the Manitoba Public Utilities Commission.

The Windsor, Essex & Lake Shore Rapid Ry. has been authorised by the Board of Railway Commissioners to refund to C. M. Sinclair, of Bridgeburg, Ont., 98c. overcharge on a shipment of household effects from Kingsville, Ont., to Bridgeburg.

In the Lake Erie and Northern Ry.'s electrification it is said to be the intention to use a steel trolley wire, catenary suspension, the same as is used on the Pacific Electric Co.'s lines. The transmission wires and feeders will be aluminum.

The Toronto City Council has approved recommendations of the Works Commissioner for equipment for the Toronto Civic Ry.'s Gerrard St. car line, consisting of 4 heaters from the C. E. A. Carr Co., at \$175 each and 16 walkover rattan seats from the Preston Car & Coach Co. at \$15 each.

A delegate at a meeting of the Regina, Sask., Trades and Labor Council, May 24, is reported to have stated that "the city aldermen were deliberately attempting to make the municipal railway system as unsatisfactory as possible so that it will eventually have to be taken over by a private firm."

The Toronto Board of Control invited tenders recently for the machine shop equipment of the Toronto Civic Ry.'s new Danforth Ave. car barns, consisting of a 14 in. lathe, 150 ton wheel press, shaper, radial drill, vertical drill, 3,000 lb. portable crane, double emery stand, vice, hack saw, and a 35 h.p. induction motor.

The Vancouver City Council passed a resolution, May 25, instructing the City Solicitor to inform the British Columbia Electric Ry. that it was violating its agreement by issuing the so-called "tango" tickets without transfer privileges, and to advise the council as to the steps necessary to be taken to enforce the agreement.

It is stated that the Toronto Commissioner of Works will assemble the cars to be used on the Lansdowne Ave. line of the

Toronto Civic Ry. at the local car barns. He expects to do this and have the cars completed at a total cost of \$4,750 each, the lowest tender received for the cars complete being \$5,200 each. A full description of these cars was given in Canadian Railway and Marine World for May, pg. 187.

The Hamilton St. Ry. is using a new transfer ticket, white on even numbered days, and yellow on odd numbered days of the month. The route from which the passenger seeks a transfer, and the one to which he is going must be punched out by the conductor. With the old form the passenger simply stated he wanted a transfer north, south, east or west, and received it accordingly.

The Saskatoon and Sutherland Construction Co., and its members personally, gave a note for \$3,800 with interest at 8%, to Longergan and Haresford, in connection with the building of the electric railway from Saskatoon to Sutherland, Sask. The note was made Dec. 19, 1913, and became due April 18, 1914. Since maturity \$700 has been paid, and the holders sued to recover the balance, which with interest, amounts to \$3,421.95. Judgment was reserved.

The Toronto Ry. recently brought the parents of a number of small children before the police magistrate, for refusing to pay fares for their children on the company's cars. No fines were asked for or inflicted, the magistrate informing the parents, that for children who were able to walk and occupied seats in the cars, the half fare demanded by law must be paid, and being seated on passengers' knees does not make children free passengers.

The Hamilton, Grimsby and Beamsville Electric Ry. has been granted leave to appeal against the order of the Ontario Railway and Municipal Board respecting the provision of sanitary accommodation on its cars and at stations. The question at issue is one of jurisdiction, the company claiming that its railway is subject to the jurisdiction of the Board of Railway Commissioners. The order was given in full in Canadian Railway and Marine World for June, pg. 226.

H. G. Matthews, General Manager, Quebec Ry. Light, Heat and Power Co., is reported to have stated, June 3, that it is hoped by the end of the year to have the welding of the joints throughout the whole track in the city completed. A section of this work has been completed, producing a smoother running of the cars. Six double truck cars were placed in service on the extension to Limoilou towards the end of June, and it is stated that by the autumn only double truck cars will be run on Crown St.

Twenty-five Brantford citizens are speculating as to what responsibility transportation companies assume when they issue combination tickets, particularly on public holidays. They purchased tickets from the Brantford and Hamilton Ry., entitling them to make the trip to Toronto and return by electric railway and steamboat on May 24. The return steamer was late and did not arrive in Hamilton until 2.30 on the morning of the 25th at a time when there were no cars being operated. Some of the passengers expressed the opinion that the company should have put on a special car, or that they should have been provided for at an hotel. The company points out that the combination ticket is only issued for the convenience of the passenger, to relieve him of the necessity of buying tickets from each company affected, and unless special travelling facilities are offered, does not impose any obligation on any of the companies concerned to do more than operate its regular service.

## Mainly About Electric Railway People.

Norman Coryell has been appointed Master Mechanic, Moncton Tramways, Electricity & Gas Co., Ltd., succeeding R. A. McCharles.

R. J. Fleming, General Manager, Toronto Ry., is importing 19 Jersey cattle from the Rothschild herd in England, for his farm at Pickering, Ont.

E. A. W. Turbett, Mechanical Superintendent, Quebec Railway, Light, Heat & Power Co., has joined the Canadian Overseas Railway Construction Corps.

H. A. Robson, Public Utilities Commissioner for Manitoba, has been appointed one of a commission of three to investigate charges of a political saw off having been made in Manitoba recently.

Wm. C. Hawkins, Managing Director and Secretary, Dominion Power & Transmission Co., Hamilton, Ont., spent the latter part of June in Cape Breton with Mrs. Hawkins on a fishing trip.

W. L. Wright, C.P.R. general offices, Montreal, has been appointed Secretary-Treasurer, Hull Electric Co., succeeding A. E. Robertson, who was acting Secretary Treasurer.

A. B. Colville, Vice President, Electric Power Co., Ltd., of which the Peterborough Radial Ry. Co. is a subsidiary, is going on overseas service as a lieutenant in the 39th battalion.

L. G. Ireland, Manager of the city's hydro electric plant at Brantford, Ont., has, as foreshadowed in our last issue, also been appointed Manager of the Brantford Municipal Ry.

E. A. Evans, M. Can. Soc. C.E., Quebec, formerly General Manager, Quebec Railway, Light, Heat & Power Co., and a former President of the Canadian Electric Railway Association, is convalescent after a severe attack of pleuro-pneumonia.

W. G. Ferguson, Manager, Otonabee Power Co., has also been appointed acting Manager, Peterborough Radial Ry., Peterborough, Ont., during the absence of W. H. Munro, Local Manager, who has received a commission in the Motor Transport Branch, Canadian Overseas Expeditionary Force.

A. J. Mitchell, Comptroller, Mackenzie, Mann & Co., Ltd., and Assistant to the Vice President, Canadian Northern Ry., Toronto, has been elected Vice President of the Chatham, Wallaceburg & Lake Erie Ry., succeeding J. D. Morton, Assistant Comptroller, Canadian Northern Ry., Toronto.

Lt. Col. J. E. Hutcheson, General Manager, Montreal Tramways Co., who is second in command of the Montreal Home Guard, a body 2,000 strong, is giving a trophy for the aggregate of the best three scores to be made during the season with the Savage rifle at the Pointe Aux Trembles range.

A. L. Farquharson, Manager of Public Utilities, Fort William, Ont., has taken over the management of the municipal electric railway there, succeeding M. O. Robinson, formerly Manager of both the Fort William and Port Arthur Municipal Electric Railways, who continues to manage the Port Arthur Electric Ry.

Clark V. Wood, who has been elected President, Springfield St. Ry., Springfield, Mass., and also Vice President of several smaller electric railways forming part of the Springfield system, vice J. T. Harmer, resigned, entered G.T.R. service in 1881, and served as operator at various points between Montreal and Portland, Me. He subsequently served with other railways in the U. S., and prior to his election as President, was Vice President, Springfield St. Ry.



**Capt. C. E. McGee**, Accountant, Moose Jaw Electric Ry., Moose Jaw, Sask., who has been killed in action in Belgium, was a son of J. J. McGee, ex Clerk of the Privy Council of Canada, and nephew of the late Hon. Thos. D'Arcy McGee, M.P., who was assassinated in Ottawa shortly after Confederation. He served in the South African war in the 1st Canadian Mounted Rifles and was at the side of Trooper Mulloy when the latter was blinded, the same explosion tearing a rifle out of McGee's hands. After the South African war he was appointed by the British Government as Customs Inspector at Lorenzo Marquis. Some 3 years ago he returned to Ottawa and about 2 years ago went to Moose Jaw.

**James Dewar Fraser**, who has been elected President, Canadian Electric Railway Association for the current year, and whose portrait appears in this issue, was born at St. Andrews, Que., Mar. 26, 1851. From 1871 to 1882 he was accountant and telegraph operator, W. McClymont and Co., Ottawa; 1882 to 1891, Secretary-Treasurer, Ottawa City Passenger Ry.; in 1891 he was appointed Secretary-Treasurer, Ottawa Electric Ry., which position he still holds. In 1893 he was also appointed Secretary-Treasurer, Ottawa Car Co., now Ottawa Car Manufacturing Co., and in 1906 he was elected a director. In 1913 he was elected a director, Ottawa Electric Ry. Co., and in 1914 also a director, Ottawa Traction Co. In addition to these positions, he is a director and Secretary-Treasurer, Wallace Realty Co.

**E. P. Coleman**, who has been elected Vice President, Canadian Electric Railway Association, and whose portrait appears in this issue, was born at Taunton, Mass., June 14, 1867, and educated at the public schools there. He was, from Feb. 9, 1885, to Feb. 9, 1896, in the draughting room of Hube Printing Press, at the shops of the Taunton Locomotive Manufacturing Co., with which his father and grandfather had been associated for many years; Jan. 1, 1896, to Sept. 1, 1900, Treasurer and General Manager, Attleboro Steam and Electric Co., Attleboro, Mass.; May 5, 1898, to Mar. 31, 1899, in United States service during the Spanish war as Second Lieutenant and Battalion Adjutant, 5th Massachusetts Infantry; July 1, 1899, to Sept. 1, 1900, General Manager, Plymouth Electric Light Co., Plymouth, Mass.; Sept. 1, 1900, to June 1, 1905, Vice President and General Manager, Consolidated Lighting Co., Montpelier, Vt.; June 1, 1905, to Mar. 1, 1907, in practice as consulting engineer, general, electric light, power, railway and quarry work, and Treasurer and Manager, Wetmore and Morse Granite Co., Montpelier, Vt.; Mar. 1, 1907, to Jan. 1, 1909, General Manager, Great Northern Power Co., Duluth, Minn.; Mar. 1, 1909, to Oct., 1912, Manager of Railways, and since Oct., 1912, General Manager, Dominion Power and Transmission Co., Ltd., Hamilton, Ont.

**Detroit Freight Contract.**—The Detroit (Mich.) United Railway freight department reports closing a contract to handle 18,000 tons of sand, gravel and cement from the Grand Trunk Ry. connection between Birmingham and Royal Oak, Mich., a distance of approximately 5 miles. This material will be set on team trucks and will be used in constructing good roads. The freight department of this road has also closed a contract to transport 25,000 automobile touring bodies between Detroit and Flint, Mich. These shipments will include sedan and couplet bodies manufactured by the Fisher Body Company, Detroit, and will be delivered to the Buick Motor Car Company, at Flint, Mich. The total haul will be approximately 68 miles, and it will take four months to handle the 1050 cars required for this contract.—Electric Railway Journal.

### Calgary Municipal Railway Earnings, Etc.

The results of operation for May, compared with those for May, 1914, are as follows:			
	1915.	1914.	
Earnings .....	\$15,745.75	\$61,596.15	
Expenditure.			
Maintenance of Way and Structures .....	907.08	620.74	
Maintenance of Equipment .....	2,824.43	4,810.01	
Transportation .....	23,497.73	34,610.99	
General Expenses .....	1,954.51	2,961.91	
Total operating expenses .....	29,183.75	43,003.65	
Balance revenue over same .....	16,562.00	18,592.50	
Fixed charges .....	16,725.31	15,125.67	
Deficit for month, 1915.	163.31		
Surplus for month, 1914		3,466.83	

Statistics.			
Cars operated, regular .....	38	48	
Cars operated, extra .....	22	12	
Miles operated .....	226,172	267,468	
Passengers carried .....	1,099,604	1,490,319	
Revenue per car mile .....	20.226 Cents.	23.029 Cents.	
Operating expenses per car mile .....	12.903 "	16.078 "	
Cost of power per car mile .....	2.892 "	3.518 "	
Average fare collected .....	4.060 "	59.8% "	
Proportion operating expenses to gross revenue .....	63.8% "	4.011 "	

### London and Port Stanley Railway Traffic Matters.

It is said that the passenger fares upon the newly electrified London and Port Stanley Ry., will be at 2c. a mile with a 30c. fare from London to Port Stanley at least one day in the week. Books of tickets for commuters will, it is said, be issued at \$5. The rate charged on this railway heretofore between London and Port Stanley, under steam operation, has been 30c., but notwithstanding this, passengers have preferred to travel by the London and Lake Erie Ry. and Transportation Co.'s electric line at a 50c. fare, the proportion being, it is reported, at the rate of four to one in favor of the L.E.R. & T. Co.'s line. A 40 minute service will, it is said, be given between the termini, and it is expected that the trip will be made in 45 minutes. In an interview, June 11, Vice Chairman Pocock of the London Railway Commission is reported to have said: "The advantage of a properly managed public utility is that the price of the commodity will be reduced as conditions demand. We have had continual reductions in the price of hydro, because the public use the commodity and we are able to cut the price, because of the increase in business. The same will follow with respect to fares on the London & Port Stanley line. We are going to serve the public at the lowest possible rate. We will have the best equipment in Canada, and the passenger traffic will be handled in the most efficient and speediest manner possible."

The Michigan Central Rd. has terminal facilities in London, partly laid out on land owned by a local company which still preserves its separate corporate existence. The M.C.R. lease of this property is about to expire and in connection with its future plans for serving London negotiations were opened June 5, with the London Railway Commission. It was also reported, June 11, that the Wabash Rd. was about to submit a proposition to the Commission for running rights, either over the whole line or the section between St. Thomas and London. The Vice Chairman of the Commission is reported to have said, June 11, that Pere Marquette traffic between London and St. Thomas would be handled by the Commission.

Another question, viz., that of the G.T.R. traffic, is under discussion. The G.T.R., which is the minority stockholder in the L. and P.S.R., operated the line for about 20 years and then abandoned it. A local paper says the City Corporation subsequently

asked the G.T.R. "to operate the line at a rental of one cent a year, and met with a refusal." According to a statement made on behalf of the G.T.R. during the electrification campaign, that company provides or controls 80% of the traffic going over the line, and "in the event of electrification we would be forced to provide such a channel for freight as we would feel assured would be necessary to protect our own interests in the regulation and prompt handling of supply coal." The G.T.R. holds a charter and has had surveys made for the building of a line from Port Burwell into London, which it was proposed to build, and to transfer to Port Burwell, the car ferry traffic heretofore being operated to Port Stanley. Nothing has been done in the way of arranging

for construction on this line, but the Pere Marquette Rd., which through its Canadian end, the Lake Erie and Detroit River Ry., has been operating the L. and P.S.R., has started work on the enlargement of its coal dock facilities at Rondeau, south of Chatham. Press reports state that the G.T.R. proposes to route its coal traffic to Rondeau instead of Port Stanley, and carry it to London by way of Chatham. (June, pg. 229.)

### Regina Municipal Railway Earnings, Etc.

The operating results for April, compared with those for April, 1914, are as follows:

	1915.	1914.	
Revenue .....	\$12,946.92	\$18,124.24	
Expenses .....	14,245.67	20,404.43	
Capital charges .....	9,137.58	7,476.52	
Operating deficit .....	1,298.75	2,280.19	
Expenses per car mile without power .....	13.63c	14.59c	
Expenses per car mile with power .....	18.03c	19.48c	
Power per k.w.h. ....	2.04c	2.00c	
Platform wages per car mile .....	74.06c	73.91c	
Expenses, percentage of earnings, less capital charges .....	110.03%		
Expenses, percentage of earnings, with capital charges .....	180.61%		

**Grand Valley Ry.**—The City of Brantford, Ont., which owns the Grand Valley Ry. from Paris to Galt, has offered to sell the line to the Lake Erie and Northern Ry., which is leased to the C.P.R. for 99 years, and which will, on completion be operated as part of the Galt, Preston and Hespeler St. Ry., of which Martin N. Todd is President, and which is also controlled by the C.P.R. The city's offer is stated to be the sale of the G.V.R. from Paris to Galt, for \$30,000, the city to retain the portion to Blue Lake siding, and the L.E. & N.R. to electrify its line from Port Dover to Brantford. The L.E. & N.R. makes a counter proposal, which is stated to be \$26,000 for the G.V.R., the city to retain the transformer house at Galt, and to agree to the electrification of the L.E. & N.R. from Galt to Brantford only.

**The Cobourg Steel Co.** has been incorporated under the Ontario Companies Act, with an authorized capital of \$400,000 and office at Cobourg, Ont., to carry on a general manufacturing business in steel goods.

**The partially decarburized faces of a rail ingot**, leaves a thin layer of soft metal on the surfaces of the finished rail, to which is attributed the sloughing off of the rail head under the cold rolling action of the wheels.



# Marine Department

## The United States and Railway Ownership of Lake Steamship Lines.

The Panama Canal Act, which came into force in the United States when that Government completed and opened for traffic the Panama Canal, provides, among other things, that any railway company owning or controlling and operating vessels on any waters under U. S. jurisdiction, shall divorce such interests, so that the two means of transportation shall be under separate control. By a decision of the Interstate Commerce Commission of May 15, several railway companies owning or controlling, either wholly or in part, steamship lines on the Great Lakes were ordered to divest themselves of their holdings. The Commission has, however, the right to permit the continuation of such operation under certain conditions, and applications concerning the operation of steamships by Canadian railway companies with U. S. connections have been dealt with, those of the C.P.R. in connection with the Pennsylvania-Ontario Transportation Co., the G.T.R. in connection with the Ontario Car Ferry Co., and the Grand Trunk Western Ry. in connection with the Grand Trunk Milwaukee Car Ferry Co., being granted, and one of the G.T.R. in connection with the Canada Atlantic Transit Co. being denied as from Dec. 1, 1915. Following are the Commission's decisions summarised:—

### **Pennsylvania-Ontario Transportation Co.**

This case involves applications of the Pennsylvania Co. and the C.P.R. under the provisions of sec. 5 of the Act to Regulate Commerce, as amended by the Panama Canal Act, to continue their interest in and joint operation of the Pennsylvania-Ontario Transportation Co., and were heard together. The Pennsylvania Co. owns and operates a railway from points in Pennsylvania to Ashtabula Harbor, Ohio. The C. P.R. owns and operates a railway in Canada with a line running from Woodstock to Port Burwell, Ont. The Pennsylvania-Ontario Transportation Co. owns and operates a car ferry plying on Lake Erie between Ashtabula, Ohio, and Port Burwell, Ont. The capital stock of this company, \$375,000, is held jointly, one-third by the Pennsylvania Co., one-third by the C.P.R., and one-third by J. W. Ellsworth & Co. It has no bonds outstanding and no obligations of any kind other than those for current expenses. Under its organization it has a board of directors, each one-third interest being represented by two directors. It appears that there is some sort of an operating agreement between the several parties interested in this car ferry by which the two petitioners alone share all expenses and profits. The Pennsylvania-Ontario Transportation Co. owns and operates between Ashtabula Harbor, Ohio, and Port Burwell, Ont., one steam vessel, the Ashtabula, having a registered tonnage of 125 tons, with ferry capacity of 32 cars. It is not equipped to carry passengers and files no tariffs with the Commission publishing passenger fares. The boat makes two trips a day. It does not appear that either of the petitioners owns a line of railway operating between the ports served by their boat, nor is either petitioner an integral part of any railway system owning such paralleling rails. It appears, however, that each of the petitioners is a party to through routes via the Buffalo gateway to and from the ports served by their boat, by which it is possible for them to compete with their boat for

traffic within the meaning of the act to regulate commerce. The car ferry primarily provides a short route for the transportation of coal to Canada and serves practically as a bridge over Lake Erie, by which there is a saving in rail haul of some 200 miles.

From a consideration of all the conditions and circumstances of record, the Commission is of opinion and finds that the existing specified service by water is being operated in the interest of the public and is of advantage to the convenience and commerce of the people, and that a continuance thereof will neither exclude, prevent, nor reduce competition on the route by water under consideration. It is therefore ordered that the applications herein for an extension of time beyond July 1, 1914, within which petitioners may continue their interest in and joint operation of the existing specified service by water herein concerned be granted, subject to further orders by the Commission, and that the rates, fares, schedules and regulations applicable to the transportation by water concerned be filed with the Commission and posted to the public as acquired by the Commission's regulations, effective July, 1, 1915.

### **Ontario Car Ferry Co.**

The application of the G.T.R. involves its interest in and joint operation of the Ontario Car Ferry Co., and its interest in and joint operation of the Canada Atlantic Transit Co. of the United States. This report concerns only this railway's interest in and joint operation of the Ontario Car Ferry Co., which is a Canadian corporation, with a capital stock of \$500,000, divided into 5,000 shares of \$100 each. The G.T.R. owns 2,497 shares, and the Buffalo, Rochester & Pittsburgh Ry. owns a like number, the 6 remaining shares are held by the 6 directors of the ferry company, 3 of whom represent the G.T.R. interests, and the other 3 the B. R. & P. R. interests. The Ontario Car Ferry Co. owns one steel vessel, Ontario No. 1, of Canadian register, of car ferry type, with a capacity on main deck of 28 loaded coal cars, and is equipped with passenger accommodations sufficient for 900 passengers, in addition to the crew, which plies between Genesee Dock, about 2½ miles south of Charlotte, N.Y., and Cobourg, Ont., about 60 miles, connecting the Buffalo, Rochester & Pittsburgh Ry. at Genesee Dock with the G.T.R. at Cobourg, Ont. The company is building a sister ship, known as Ontario No. 2, of similar design and capacity to Ontario No. 1. The G.T.R. operates a railway in Canada and in the U.S., serving territory contiguous to the northern shore of Lake Ontario, reaching several ports on the lake, among others Cobourg, and the Buffalo, Rochester & Pittsburgh Ry. operates in Pennsylvania and New York States reaching the southern shore of Lake Ontario at Genesee Dock, N.Y.

It does not appear that the petitioner owns rails paralleling the water route of the Ontario Car Ferry Co. or that it is interested in a system of railway owning such paralleling rails. From tariffs on file with the Commission it appears that the petitioner herein makes joint through rates all rail via the Niagara gateway from Cobourg, Ont., to Genesee Dock, N.Y. By reason of the existence of these through route arrangements it is possible for the

petitioner herein to compete for traffic with the ferry boats in which it is interested within the meaning of the act. It appears from the record that this ferry line was primarily established to transport coal to Cobourg, Ont., for G.T.R. use. In addition to this coal traffic, however, the ferry company has developed a carload business in other freight. No less-than-carload freight is carried. During the summer many tourist passengers are hauled to the Muskoka Lakes, Kawartha Lakes, and other Ontario resorts. The Ontario Car Ferry Co. is in competition for passenger business with the Canada Steamship Lines Ltd. The passenger fares via the ferry line are the same as the fares via the other boat lines, and the freight rates via the ferry line are the same as the all-rail rates. It appears, however, that the ferry line is somewhat of a transportation convenience in that it relieves the congestion incident to all-rail movement via the Niagara transfer and in that it provides a quicker transportation route between the two ports which it serves.

From a consideration of all the circumstances and conditions the Commission is of opinion and finds that the existing specified service by water is being operated in the interest of the public and is of advantage to the convenience and commerce of the people, and that an extension thereof will neither exclude, prevent, nor reduce competition on the route by water here under consideration. It is therefore ordered that the application for an extension of time beyond July 1, 1914, during which petitioner may continue its interest in and operation of the existing specified service by water be granted subject to such future orders of the Commission, and it is further ordered that the rates, fares, schedules and regulations applicable to the service be filed with the Commission and posted to the public according to the Commission's rules, effective July 1, 1915.

A similar order was issued concerning the joint operation of the Ontario Car Ferry Co. by the Buffalo, Rochester & Pittsburgh Ry. on the latter's application.

### **Grand Trunk Milwaukee Car Ferry Co.**

The Grand Trunk Western Ry. Co. operates an interstate railway between Port Huron, Mich., and Chicago, Ill., via Durand, Lansing, and Battle Creek, Mich., and South Bend and Valparaiso, Ind. It owns no capital stock in any boat or line of boats operating on the great lakes or tributary waters. A large majority of its capital stock, however, is held by individuals as trustees for the G.T.R. Co. of Canada, and that company through trustees controls and owns the capital stock of the Detroit, Grand Haven & Milwaukee Ry., operated from Detroit, Mich., westerly to Grand Haven, Mich., intersecting the line of the petitioning railway at Durand, Mich. From Grand Haven, Mich., the D., G. H. & M. R. reaches Milwaukee, Wis., by car ferry boats owned by the Grand Trunk Milwaukee Car Ferry Co., which is organized under the laws of Wisconsin, having an identity in ownership with the G.T.R. Co. of Canada, the D., G. H. & M. Ry. Co., and the petitioning railway. It does not appear in the record how or by whom the stock of the car ferry company is held, but it does appear that these four companies have stockholders, directors, and officers in common,



and are integral parts of the G.T.R. system. It does not appear that the rails of the petitioning railway or those of the G.T.R. system reach Milwaukee. It appears, however, from the record that the petitioning railway makes joint rates from points on its line via Chicago to points beyond in the general territory west of Lake Michigan, to which rates are also made by the D., G. H. & M. R. via Grand Haven and the car ferry through Milwaukee. It also appears from a tariff published by the petitioning railway, G.T.W.L.I.C.C. no. A-1630, that the petitioner makes joint through all-rail class rates via Chicago to Milwaukee. It appearing that the petitioner has in effect through joint rates, all rail, to the port served by boats belonging to the same system of which it forms a part, it can but result that by reason of such through routes and joint all-rail rates the petitioner may compete with the boats in which it has an interest and that a possibility of competition exists between such all-rail route and the route by water. It should be borne in mind that the all-rail route would be very indirect, and the probability of active competition between the two routes is remote.

It is contended on behalf of the petitioner that the purpose of the act with respect to waters "elsewhere" is necessarily controlled by the purpose of Congress with respect to the water routes through the Panama Canal, and that the purpose of the act with respect to the water routes through the Panama Canal was to prevent any railway having an all-rail transcontinental route from owning a boat line operating via such water route which it could use to eliminate independent water lines operating through the canal, and thus dominate and control the business by reason of monopoly of the water route. It should be noted, however, that when Congress enacted this law there was no single railway company nor any system of railway owning or operating rails reaching from the Atlantic coast to the Pacific coast, but that the only transcontinental all-rail routes existed only under through route arrangements over which joint rates were made applicable, and that, therefore, if it was not in the mind of Congress that the existence of joint through route arrangements constituted such an all-rail line as brought about a condition of potential competition between a railway participating in such through route arrangements and a boat line which it intended to operate through the Panama Canal, this part of the act is so many meaningless words and is of no avail. It appears that the Grand Trunk Milwaukee Car Ferry Co. owns and operates two car ferry boats, known as the Grand Haven and the Milwaukee, the former having a freight capacity of 28 cars and a licensed passenger capacity of 1,500, equipped with sleeping accommodations for about 100 passengers, while the latter has a freight capacity of 30 cars and a licensed passenger capacity of 3,000, equipped with sleeping accommodations for about 100 passengers. The distance across Lake Michigan traversed by these boats from Grand Haven to Milwaukee is about 85 miles, and this ferry line serves practically as a bridge by means of which the D., G. H. & M. Ry. may reach Milwaukee. It appears that the idea of a car ferry between these two points was conceived and inaugurated as a private independent enterprise, but that under its former operation it was a failure and was taken over by G.T.R. interests and has been maintained without view to the cost of the service but rather to the character of the service possible through its maintenance. It appears that at times the Chicago gateway on all-rail movements of traffic is greatly congested so that serious delays result, which delays are overcome by routing

traffic over this car ferry. The car ferry is operated regularly, without regard to the amount of traffic offered per trip, and furnishes an all-season service. It appears also that in addition to the G.T. Milwaukee Car Ferry there is a car ferry operated by the Pere Marquette Rd., from Ludington to Milwaukee; also a car ferry operated by the Ann Arbor Rd. from Frankfort to Menominee, Mich., and Kewaunee and Manitowoc, Wis.; also an independent break-bulk steamship line operated by the Goodrich Transportation Co. on regular sailings from Grand Haven to Milwaukee via Chicago. It appears further that rates via this car ferry are the same as rates applicable to the all-rail movement, and that rates since the car ferry came into the port there has been no lowering or increase of session of the G.T.R. in 1906. It is contended that if the joint ownership and operation were discontinued the car ferry company would necessarily go out of business because of expensive operation and resulting loss that would accrue to the company. It appears that the profit accruing to the car ferry company, as shown by its statement for the half year ended Dec. 31, 1913, was \$58,300.41, which was turned over to the D., G. H. & M. R. to discharge indebtedness to that company.

From a consideration of all the circumstances and conditions, the Commission is of opinion and finds that the existing specified service by water is being operated in the interest of the public and is of advantage to the convenience and commerce of the people, and that a continuance thereof will neither exclude, prevent, nor reduce competition on the route by water under consideration. It is therefore ordered that the application for an extension of the time beyond July 1, 1914, during which petitioner may continue its interest in and operation of existing specified service by water be granted subject to such future orders of the Commission, and that rates, fares, schedules and regulations applicable to such service be filed with the Commission and posted to the public according to the Commission's rules, effective July 1, 1915.

#### Canada Atlantic Transit Co.

The Canada Atlantic Transit Co. is owned by the G.T.R. Co. of Canada and operates three steamships between Depot Harbor, Georgian Bay, Ont., and Chicago and Milwaukee. The G.T.R. reaches Depot Harbor, which is the only port served in common with its transit line, but by reason of its ownership through stock control, of the Grand Trunk Western Ry., it reaches Chicago and Port Huron over that line. The first controlling question under this application, is whether or not, within the meaning of the Panama Canal Act, there is or may be competition for traffic between the vessels operated and the railway interested in them. The physical situation would itself establish the case if the ports of call were served in common by the boats and the paralleling railway, but no such case is made out in the records. It is a fact, however, that the G.T.R., the owning entity, has an interest in other railways whose paralleling rails do serve ports of call in common with the boats. It is urged that this does not establish a case within the meaning of the act, and that the act only applies to cases where there is competition, actual or potential, between the boats and the rails actually operated by the owning entity. The section of the act referred to reads as follows,—

"From and after July 1, 1914, it shall be unlawful for any railroad company or other common carrier subject to the act to regulate commerce, to own, lease, operate, control, or have any interest whatsoever (by stock ownership or otherwise, either directly or indirectly, through any holding company, or by stockholders, or directors in common, or in any

other manner) in any common carrier by water operating through the Panama Canal or elsewhere with which said railroad or other carrier aforesaid does or may compete for traffic or any vessel carrying freight or passengers upon said water route or elsewhere with which said railroad or other carrier aforesaid does or may compete for traffic; and in case of the violation of this provision each day in which such violation continues shall be deemed a separate offence."

The unsoundness of the contention is at once manifest when it is seen how the act could be evaded by a reorganization incorporating the parallel rails which reach the port of call into an entity distinct from the entity owning the boats, with the real ownership, through stock control, remaining as before. From a consideration of all the circumstances and conditions disclosed in the records, the Commission is of opinion and finds that the specified service by water concerned is not operated in the interest of the public or is of advantage to the convenience or commerce of the people within the meaning of the act, and that an extension and continuance thereof will prevent, exclude and reduce competition on the Great Lakes. It is therefore ordered that the application be denied, effective Dec. 1, 1915.

#### Marquette and Bessemer Dock and Navigation Co.

In the application of the Pere Marquette Rd., and the Bessemer and Lake Erie Rd., concerning their joint operation of the Marquette and Bessemer Dock and Navigation Co., the record shows that the P.M.R. extends from Buffalo, N.Y., through Ontario to Windsor, Ont., where it is intersected by the Detroit River, and thence to Chicago, Ill., with a branch in Canada to Sarnia, Ont., where it is intersected by the St. Clair River, and then extends from Port Huron to Ludington, Mich. Where it is intersected by the two rivers named, the P.M.R. operates car ferries uniting its rails in Ontario and Michigan. The boat operating on the Detroit River between Windsor and Detroit is Pere Marquette No. 14, with capacity of 26 cars, and the one operating on the St. Clair River, between Sarnia and Port Huron is International, with capacity of 15 cars. It does not appear that the P.M.R. owns any paralleling rails reaching the ports served by either of these ferries, nor is it a part of a railway owning such parallel rails, nor does it appear that the P.M.R. is a party to any paralleling through all-rail routes between such ports, and therefore it cannot compete for traffic with its ferries within the meaning of the act. The P.M.R. alone, also operates five ferry boats on Lake Michigan connecting its lines at various points, but in these cases it appears that the P.M.R. is a party to paralleling through all rail routes by means of which it may compete for traffic with its ferry boats within the meaning of the act. These boats are an essential part of the system and enable the P.M.R. to participate in through transportation to the north west from which it would be otherwise excluded, and that independent operation of the ferries would be impracticable, since it appears that no one would be able to operate them independently for what the company could afford to pay an independent ferry for getting its cars across Lake Michigan in competition with all rail routes. They are operated on a fixed schedule to expediate the through movement of freight.

From a consideration of all the circumstances and conditions, the Commission is of opinion and finds that the existing specified service by water on Lake Michigan is being operated in the interest of the public and is of advantage to the convenience and commerce of the people, and that a continuance thereof will neither exclude, prevent nor reduce competition on the routes by water under consideration.



The P.M.R. through operating rights over the London and Port Stanley Ry. from St. Catharines, Ont., reaches Port Stanley. The Bessemer and Lake Erie Rd. operates a line of railway from Pittsburg to Erie, Pa., with a branch to Conneaut, Ohio. The Marquette and Bessemer Dock and Navigation Co. has a capital stock of \$50,000, half of which is owned by the P.M.R. and half by the B. & L.E.R. It owns and operates a steel car ferry with capacity of 30 cars, on Lake Erie, between Port Stanley, Ont., and Conneaut, Ohio. Neither of the petitioners owns paralleling lines reaching the ports named, nor is either an integral part of a railway system owning such paralleling lines. Each of the petitioners, however, is a party to through all rail routes via the Buffalo gateway to these ports, and it therefore results that each may compete for traffic with their boats within the meaning of the act. The chief traffic hauled on the ferry is coal for railway use in Canada, originating on the B. & L.E.R., and by means of the ferry they are enabled to furnish an expedited service for this traffic which would otherwise have to move through the Niagara frontier and be subject to delays due to congestion. From a consideration of all the conditions and circumstances, the Commission is of opinion and finds that the existing specified service by water on Lake Erie, operated by the petitions jointly, and the service on Lake Michigan operated by the Pere Marquette Rd., is in the public interest, and of advantage to the convenience and commerce of the people, and it is ordered that the application for an extension of time beyond July 1, 1914, within which they may continue such service is granted, the rates, schedules and regulations concerning such service to be filed with the Commission and posted to the public according to the Commission's rules, effective July 1, 1915.

The Commission has denied the applications of the Pennsylvania Rd. and Northern Central Ry. regarding the Erie and Western Transportation Co.; the Lehigh Valley Rd., concerning the Lehigh Valley Transportation Co.'s lake line; New York Central and Hudson River Rd., concerning the Mutual Transit Co., and the Western Transit Co.; the Rutland Rd., concerning the Rutland Transit Co., the Erie Rd., concerning the Erie Rd. lake line, and the Mutual Transit Co.

Canada Steamship Lines, Ltd., commenced a Sunday service between Toronto and Hamilton, June 12, four trips being made.

### Fishery Patrol Boat for Lake Winnipeg.

The Marine and Fisheries Department's patrol steamboat for the fisheries service, which has been under construction for some time at Selkirk, Man., was launched there at the end of May, and christened George H. Bradbury, the ceremony being performed by Mrs. R. Rogers, wife of the Minister of Public Works.

The vessel was specially designed for this particular service, and in addition to performing general patrol duties, will carry large quantities of spawn in connection with the fish hatchery at Lake Winnipegosis, and also install and handle buoys on Lake Winnipeg. She is of steel throughout, and built to Lloyd's 100 A1, lake service class, with a raked stem and cruiser stern. The hull is divided by five main transverse watertight bulkheads, and two longitudinal bunker bulkheads, also watertight. At the fore end special strengthening has been introduced for working in light ice. The underwater portion of the vessel is sheathed with wood. The deck auxiliaries include the usual windlass, capstan and steering gear, the steering engine being located in the engine casing and connected to the rudder head by chains and quadrants, and controlled from the wheel house on the navigating bridge. Complete systems of steam heating, ventilation, pumping and draining, fresh water and sanitary services are provided, the last mentioned being on the pressure system supplied from a duplex pump situated in the engine room. The electric generating set consists of a steam turbo-generator of 14 k.w. capacity, capable of supplying at the same time the ordinary ship's lighting and the searchlight. The searchlight is located on top of the wheel house and is of 16,000 c.p. The equipment is in accordance with Lloyd's rules and the Canadian steamboat regulations, and includes the usual lifeboat accommodation, sufficient for all on board, and also a motor launch with a speed of eight miles an hour. Accommodation is provided for a crew of 17, including officers, men and fish crew. The propelling machinery consists of two sets of inverted, vertical, direct acting, triple expansion, jet condensing engines with cylinders 11, 18 and 30 ins. diam., by 20 ins. stroke, capable of developing 900 i.h.p. when running at 180 r.p.m. with 180 lbs. of steam. Steam is supplied from two cylindrical, single ended boilers 11 by 10½ ft. fitted with Morison's furnaces and worked under forced draught.

The dimensions are, length overall 149½ ft., length between perpendiculars 140 ft.,

breadth moulded 26½ ft., breadth extreme 27 ft. ¾ in., depth moulded 13½ ft., draught mean 7½ ft., speed 12 knots an hour.

She was designed by, and built under the superintendence of C. F. M. Duguid, Naval Constructor to the Marine and Fisheries Department, and was fully described in Canadian Railway and Marine World for July, 1913.

### Montreal Harbor Improvement Programme for 1915.

After the Harbor Commissioners' annual inspection of the harbor, towards the end of May, W. G. Ross, Chairman, outlined the programme of improvements to be undertaken this year, for which \$2,000,000 has been provided. This includes another addition to no. 1 elevator, increasing the capacity from 2,500,000 to 4,000,000 bush., making it the largest elevator at any Atlantic seaport. On the completion of this addition the port of Montreal will have a storage capacity of 11,250,000 bush. A large amount of dredging will be undertaken this summer in different parts of the harbor, particularly in the channel between St. Helens Island and the south shore. The dredging of the south shore channel to 20 ft. is to be pushed forward as rapidly as possible, the material dredged being used for filling in where the wharves are being built. Two dredges are working behind St. Helens Island, where last year they dredged an area of about 1,000 by 335 ft. The extension of the Jacques Cartier pier is also to be undertaken, and it is proposed to make additions to two of the high level piers, of about 250 ft. for carrying steel freight sheds. The work of enlarging the Victoria pier is to be continued, providing accommodation for two additional ocean going vessels and for smaller vessels. Several new wharves will be built and the harbor railway will be extended to high level from Racine pier to the Vulcan wharf at Longue Pointe. The industrial wharf commenced last year at Pointe aux Trembles will be completed, and work will be commenced on a 400 ft. extension southerly at the Bickerdike pier, for additional coal handling facilities.

The American Line management granted increases of \$5 a month to engineers on its s.s. Philadelphia, which sailed from New York, June 6, with the privilege of leaving the vessel at Liverpool. The men are said to have at first demanded an increase of 100%.

### List of Steam Vessels Registered in Canada During May, 1915.

No.	Name	Port of Registry	Where and When Built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Engines, Etc.	Owner or Managing Owner
137-11	(1)	Sarnia, Ont.	Cleveland, Ohio, 1908	480 0	54 0	26 0	5667	3788	180 sc.	Reid Wrecking Co., Sarnia, Ont.
137-12	Sorel, Que.	Sorel, Que.	1913	52 6	13 1	5 9	38	19	13 sc.	A. Derocers, Sorel, Que.
13440	Ottawa, Ont.	Woolston, Eng.	1914	182 4	32 3	15 0	756	278	335 sc.	Minister of Customs, Ottawa.
13441	Montreal, Que.	Sorel, Que.	1915	66 3	16 0	7 5	99	43	24 sc.	J. Reid, Montreal.
13442	Sorel, Que.	Sorel, Que.	1915	96 3	22 5	6 9	194	118	13 sc.	J. L. Leclaire, Sorel, Que.
13443	Port Arthur, Ont.	Port Huron, Mich.	1893	94 5	19 2	9 0	110	75	20 sc.	Dominion Fish Co., Warton, Ont.

(1) Formerly Howard M. Hanna, Jr., a recovered wreck.

### List of Sailing Vessels and Barges Registered in Canada During May, 1915.

No.	Name	Port of Registry	Rig	Where and When Built	Length	Breadth	Depth	Reg. Tons	Owner or Managing Owner
137-71	Cupola	Lunenburg, N.S.	Schr.	La Have, N.S., 1915	72 0	22 4	18 8	73	A. A. D'Entremont, Pubnico, N.S.
137-72	Dorothy P. Sarty	"	"	Shelburne, N.S., 1915	83 0	23 0	9 0	74	J. W. Sarty, M.O., La Have, N.S.
13440	Douglas B. Conrad	"	"	" 1914	93 0	23 0	9 0	75	J. E. Conrad, M.O., La Have, N.S.
13441	L. C. T. Sarty	Port Grenville, N.S.	"	1915	175 5	36 4	12 0	518	G. M. Cochrane Co., Fox River, N.S.
13442	M. C. L.	Sorel, Que.	Dredge	Sorel, Que., 1915	109 5	23 3	7 0	163	N. Laroche, Sorel, Que.
13443	Sorel, Que.	Sorel, Que.	Schr.	Kingston, Ont., 1915	80 9	19 9	6 0	82	G. Pyke, Kingston, Ont.
134400	Tipperary	Lunenburg, N.S.	Schr.	Lunenburg, N.S., 1915	96 2	24 4	9 4	92	W. N. Reinhardt, M.O., La Have, N.S.



## Shipbuilding and Repairing Plant at Prince Rupert.

The Grand Trunk Pacific Ry.'s drydock and its surrounding plant, foundry, machine shops, etc., is expected to be ready for business early in August. Prince Rupert will then have on its harbor front the finest drydock plant along the Pacific coast, either in Canada or the United States. It has been undertaken at a cost of about \$1,500,000. The dock consists of three units, with a total capacity of 20,000 tons. There will be two end sections of 5,000 tons each, and a middle section capable of holding a boat of 10,000 tons. All the units are interchangeable, and each dock is complete in itself, with pumps and air compressors. If necessary all three sections, or units, could be joined to hold a boat 600 ft. long and weighing 20,000 tons.

In addition to the actual dock, there are four other parts to the plant, namely: the foundry, which will be able to make castings as heavy as 12 tons; a boiler shop for marine repairs as well as for the construction of boilers; a machine shop, which is equipped amongst other things with a lathe having a 72-in. head; a ship shed and carpenter shop, 160 x 300 ft., and a power house equipped with two large turbo-generators and a 15,000 ft. air compressor.

Construction work in connection with the drydock and its accompanying plant has been under way since the beginning of 1912, and the builders will soon be replaced by a staff of operators. Prince Rupert correspondence Toronto Globe, by Norman Lambert.

## Steel Tank Vessel for Imperial Oil Co.

The Imperial Oil Co., Ltd., Toronto and Sarnia, Ont., has ordered a steel oil tank vessel, to be 258 ft. long, 43 ft. beam, and 18 ft. deep to main deck, with an expansion trunk 7½ ft. above the deck running fore and aft. The vessel is to be classed with Lloyd's for highest classification for ocean going steamers, and will be used either on the lakes or ocean as may be required.

A great many closely spaced bulkheads will be fitted 'thwartships, and a continuous longitudinal bulkhead to divide the hold spaces up into 10 tanks for crude or refined oil, and four tanks for carrying lubricating oils. A cross bunker for carrying oil fuel will be fitted forward of the boiler room. The pump room will be located at the fore end of the foremost tank, in which will be placed the large pumps for handling oil cargoes. She will have a speed of eight knots loaded.

The order has been given to Collingwood Shipbuilding Co., Collingwood, Ont., delivery to be made at the opening of navigation next year. The Imperial Oil Co. has heretofore had its vessels built in Scotland.

**German Vessels after the War.** The British Solicitor-General, in conducting a case in London, Eng., recently, made the statement that detained German steamships in British ports would only be handed back to their German owners at the conclusion of the war, if the German Government observed the rules of the Hague Convention and agreed to return British vessels detained at German ports.

A Montreal press dispatch states that the Postmaster General has entered action in the Admiralty Court against the owners of the s. s. Storstad, claiming \$375,360 for loss of registered mail matter dispatched by the C. P. R. s. s. Empress of Ireland, which was sunk by the Storstad in the St. Lawrence early in 1914.

## Dominion Steel Corporation's Fleet and the Admiralty.

The Dominion Steel Corporation's President, J. H. Plummer, in his report at the annual meeting, June 24, said:—"The prospects of the Dominion Coal Co. for the coming year are good. The efficiency of the company's arrangements for transportation has been maintained as fully as possible, but we have suffered severely through the requisition by the Admiralty of some of our best colliers. The company has lost in this way the services of the Twickenham, 8,100 tons dead weight capacity; Kendal Castle, 6,750 tons; Lord Strathcona, 11,000 tons; Kamouraska, 7,400 tons; Wabana, 7,400 tons and Maskinonge, 7,400 tons; a total carrying capacity of 48,050 tons. The completion of the Dagbild has been indefinitely postponed by the Admiralty requirements. These losses interfere seriously with the delivery of coal by water, and while we have been able to secure a number of smaller steamships, chiefly from the upper lakes, the lost tonnage has not been fully replaced, and in any case the cost of transportation must be much increased over last year.

## Steamboat for Testing and Sweeping St. Lawrence Ship Channel.

The Dominion Parliament at its last session voted \$30,000 for a steamboat for testing and sweeping the St. Lawrence ship channel. The vessel, which is being built at the Dominion Government shipyard, Sorel, Que., under W. S. Jackson, Superintendent of Shipyard, and which was launched May 24, has the following dimensions, etc.: Length between perpendiculars, 140 ft.; breadth moulded, 35 ft.; depth moulded, 15 ft.; coal capacity (bunkers), 100 tons; speed, 11 miles.

It is being built of steel throughout, with 6 watertight bulkheads and double bottom for water ballast under the engines and boilers and in the fore peak for trimming purposes. The vessel has been specially designed for sweeping and sounding the St. Lawrence deep water channel for obstructions. This work is carried out most effectively by the use of a bar 40 ft. long, made of steel tube 12 ins. dia. x ¾ in. thick, suspended amidships on each side of the vessel, with steel wire ropes carried up to

the navigating bridge with gauges marking the depth of water. There will be steadying wire ropes carried forward and aft to keep the bar in position, the whole being operated from a specially designed steam winch, made at the shipyard. When working or sounding, the vessel will travel slowly against the current with the bar lowered to the testing depth. The smallest obstruction in the channel, or a variation in depth will be at once detected by the gauges (hence the name of the vessel Detector).

The vessel will be propelled by twin screws having two sets of compound surface condensing engines with cylinders 14 and 28 x 18 in. stroke, supplied by steam from a Scotch marine return tube boiler 15 ft. diam. by 11 ft. long, with 3 corrugated furnaces and having a working pressure of 130 lbs. a sq. in. The boiler is being built at the shipyard. Powerful steam steering gear, steam windlass, and boat hoisting winch will be fitted on board. One mast with a powerful derrick for handling buoys will be provided. There will be good accommodation for the staff, captain, officers and crew. Electric light will be fitted throughout.

**Toronto Harbor Navigation.**—During this year dredging operations will be carried on in connection with the Toronto harbor improvements, in the lake east of the eastern channel, and platforms placed on piles are to be erected at various points. These platforms will be lighted at night and will be quite visible during the day but will frequently be connected by heavy cables which will be invisible. All classes of vessel should keep at least 2,400 ft. from the shore between Woodbine Ave. and the eastern channel so as to clear the outside line of the platforms. From the western channel to the Humber River vessels should keep at least 1,200 ft. from the shore, as cribwork is being built between these two points approximately 1,100 ft. from the shore. Large sections of the cribs are submerged, and while every effort will be made to keep these lighted at night, safety can only be assured by avoiding the danger area. Other works are being built in the water east of a line from Parliament St. to the east pier of the Eastern channel, where there are several submerged walls. Vessels should keep west of the line indicated.

## Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during May

ARTICLES		CANADIAN CANAL	U. S. CANAL	TOTAL
Eastbound	Copper	1,351	21,018	22,369
	Grain	3,107,921	2,389,150	5,497,071
	Building stone			
	Flour	206,500	872,423	1,168,983
	Iron ore	29,120	4,877,668	4,906,788
	Pig iron			
	Lumber	7,527	44,191	51,718
	Silver ore			
	Wheat	2,747,811	10,519,686	13,267,497
	General merchandise	56,920	15,651	42,580
Westbound	Passengers	60	577	637
	Coal, hard		98,416	248,110
	Coal, soft	44,675	1,203,772	1,248,447
	Flour		100	100
	Grain		1,950	31,250
	Manufactured iron	1,801	36,450	38,251
	Iron ore			
	Salt		95,944	96,364
	General merchandise	33,101	80,088	123,189
	Passengers	471	0	471
Summary.				
Vessel passages		400	1,000	1,400
Registered tonnage		649,600	5,405,580	6,045,240
Freight—Eastbound		928,714	4,008,574	4,937,288
—Westbound		70,727	1,503,302	1,673,029
Total freight		318,440	7,030,126	7,348,566



## Shipping Letters From the Head of the Lakes.

F. & W. Jones, brokers, Fort William, Ont., have issued weekly letters as follows:

**June 5.**—The coal business has been fairly active during the week, 6 cargoes having been unloaded, 4 anthracite and 2 bituminous, three carried in Canadian steamships and three in United States steamships. The outlook for the coming week is not over bright, with only two cargoes in sight, one for the C.P.R. and one for the Canadian Northern dock. It is anticipated that business in coal during June will be very light. Western car shipments were practically nil during the week.

There have been no shipments of ore during the week and no charters are in sight. Ore is arriving at the dock at the rate of about 400 tons a day, and there is still about 40,000 tons to come down.

The opening of June brought a big decrease in grain shipments, there being a drop of 1,335,060 bush., compared with the last week of May. No U.S. steamships cleared, but one is loading at present. One cargo of barley was taken to Toledo in a Canadian vessel. Receipts also dropped off, but only very slightly, about 100,000 bush. Owing to the big falling off in shipments and only small drop in receipts, stock in store this week are nearly 500,000 bush. greater than last week. Weather in the west continues favorable. There was general rain in Manitoba, Saskatchewan and Alberta during the week, and it appears, too, judging from recent reports, that the cutworm peril has now passed. Leading grain experts stated this week that, with a reasonable amount of rain and other satisfactory weather conditions, the present prospects are that Canada will harvest the largest crop in 15 years.

Stocks in store at date, receipts and shipments during the week are:

	Stocks.	Receipts.	Shipments.
Wheat .....	3,235,921	1,161,289	664,860
Oats .....	1,364,023	162,527	180,681
Barley .....	248,937	23,382	128,328
Flax .....	1,451,552	21,279	5,460

**June 12.**—Coal receipts have fallen off this week, with only four cargoes arriving, 2 anthracite and 2 bituminous—three were carried in Canadian bottoms and one in an U.S. bottom. There are three steamships reported en route, one for the C.P.R. dock and two for the Canadian Northern dock. For the balance of this month the coal business will be very light, only sufficient coal to fill actual requirements is being shipped west, and there is no inclination on the part of shippers to increase their stocks at the present time. One small cargo, about 5,600 tons, was unloaded at Jackfish this week, and was carried in a Canadian bottom. This makes a total of about 25,000 tons, all bituminous, shipped to Jackfish this season, with nothing more in sight at present.

No ore has been shipped this week and no steamships are reported as chartered. There is now from 10,000 to 12,000 tons on the dock, and cars from the mines continue to arrive, so that stocks are rapidly increasing.

There was a slight increase in grain shipments this week over last, approximately 132,569 bush., eight cargoes having been shipped, all in Canadian vessels consigned to Canadian ports. Receipts show a decrease of about 372,296 bush. and stocks show a decrease of about 113,720 bush. below last week. The statement of Canadian visible supply handed out on June 4 showed 11,741,843 bush. of all kinds of grain, excepting flax, in store, as compared with 31,056,133 bush. this date last year. Of this, 4,847,881 is in the terminals at Fort William and Port Arthur, 4,265,517 in store

at Montreal, 1,382,701 in store at Port Colborne, and the balance distributed in various terminals at eastern ports. By the foregoing figures it will be easily seen that very little movement can be expected until the new crop is harvested. Weather conditions in the west continue favorable, there has been general rain in the western provinces, which will be beneficial not only because of the moisture it brought to the soil as a nutriment, but also because of its probable killing of the cutworms that have caused damage in some localities. The reports are altogether optimistic, and satisfactory progress in the growth of crops is reported from all the prairie provinces. It is now finally estimated that the increased acreage in both barley and flax is very small, but in wheat it is about 14.5%, and in oats about 10.2%. Basing an estimate on these figures and assuming favorable weather conditions continue, there should be available for lake shipments from 200,000,000 to 260,000,000 bush. of all grains. It is still considered that harvesting will commence at least three weeks earlier than in previous seasons.

Stocks in store at date, with receipts and shipments, are:

	Stocks.	Receipts.	Shipments.
Wheat .....	3,087,070	785,351	934,200
Oats .....	1,438,297	155,869	81,595
Barley .....	194,050	23,763	78,651
Flax .....	1,467,296	32,196	16,452

**June 19.**—Coal receipts this week were about the same as last week, four cargoes arriving, three bituminous and one anthracite, one carried in U.S. bottom and three in Canadian bottoms. There are three cargoes reported en route, two for the C.P.R. dock, one anthracite and one bituminous, and one for the C.N.R. dock with bituminous. Shipments to the west remain very light, and the prospects for any immediate increase in the coal trade are poor, in fact no great movement is expected until well into August. One cargo of ore (about 3,000 tons) was shipped this week. There is still considerable ore on the dock, but no further charters are reported. Grain shipments during the past week have continued to show slight increase in volume, the total moved by lake transit being 1,489,340 bush., against 997,181 during the previous week, an increase of 493,159. There were eight vessels cleared with grain during this period, only one of which was U.S. register, two cargoes only going to U.S. ports. Receipts from the west have shown a decline of 125,000 bush., compared with last week, thus elevator stocks, after allowing for an increase in lake movement and decline in western receipts, naturally show considerable decrease, 5,492,736 bush. of all grains, against 6,315,177 a week ago. Reports of crop conditions still continue favorable, although somewhat modified in tone. Heavy rain storms have been general throughout the western provinces, with several degrees of frost in Saskatchewan. The frost, however, is not reported as being sufficient to cause serious damage being counteracted by the rain. In result it is expected that the present wet will probably lower the grades and cause some delay in date of harvesting, but will not affect volume. The total acreage under cultivation in the western provinces is reported by the Government as being: Wheat, 12,896,000 acres; this is 2,602,000 acres in excess of that harvested in 1914, and is the largest ever sown in Canada; oats, 11,427,000 acres, an increase of 1,365,500 over 1914; other grains approximately 2,500,000 acres. Prospects, therefore, of a record crop still remain good, but harvesting will probably not be quite as early as previously forecasted. Stocks in

store at date, with receipts and shipments, are:	Stocks.	Receipts.	Shipments.
Wheat .....	2,731,487	679,580	1,035,163
Oats .....	1,135,213	138,608	441,691
Barley .....	168,874	24,082	49,257
Flax .....	1,457,161	30,039	40,174

## Car Ferry Facilities at Rondeau.

In connection with the operations of the Pere Marquette Rd. in Ontario, the company in 1902 built a car ferry slip at Rondeau, Ont., and for about two years subsequently operated a car ferry service across Lake Erie to Conneant, Ohio, after which coal shipments were handled in bulk. It was decided recently to resume the Rondeau-Conneant car ferry service, and as, since the Rondeau dock was last in use larger car ferries have been built, it was found necessary to enlarge the slip proper and also the apron, from three to four tracks, necessitating new steel for the apron. The cost of reconstruction and remodelling is estimated at \$10,000. The entire construction is of wood, excepting the girders, which form a movable apron and counterweight apparatus. The construction is of the usual form for car ferry slips, consisting of a double row of sheet piling with suitable sheeting on both sides for a length of 100 ft. on the east and 40 ft. on the west side of the slip, this sheet piling being for the purpose of guiding the boat into position and holding it in place so that the ends of the rails on the boat will come exactly in line with those on the apron. The so-called apron consists of a movable piece of track, carried on four steel plate girders about 55 ft. long, on which four tracks, corresponding to those on the car ferry, are laid. The shore end of this apron rests on suitable fixed pile foundation, while the free end rests on and is attached to the boat when in position, thus making continuous track from the land to the deck of the ferry. An adjustable leaf of the apron is required to meet the varying stages of the water and the load on the car ferry. The car ferry has four tracks, with a capacity of seven cars each, or a total of 28 cars. It is said that the G.T.R. is contemplating having its coal brought in via Rondeau in future, instead of to Port Stanley and thence over the London and Port Stanley Ry. to London.

## A Staff Captain for the Northern Navigation Company.

The Northern Navigation Co., as a continuance of the progressive movements which have marked this company for several years, has instituted a new position on its s.s. Noronic, the last addition to its fleet. A staff captain has been appointed, whose duties are personally to see that the life saving apparatus on the vessel are in good shape, that the crew is practised in boat drill constantly, make a complete inspection of the vessel each day in company with the chief steward, purser and chief engineer, visiting all departments, including the kitchen, dining room, state rooms, etc., and in a general way to look after the comfort of the passengers. His duties will be subordinate to those of the captain, who will be able to devote his entire attention to the navigation of the vessel. Capt. Jas. Harrison, formerly in the service of Canadian Northern Steamships, Ltd., has been appointed to the position. He has had a wide experience on ocean vessels, and although the Northern Navigation Co. has always prided itself on the high state of discipline on its vessels, the new departure is looked to achieve results making for additional safety and comfort for those travelling on the company's vessels.



### The Loss of the s.s. A. W. Perry.

An enquiry into the stranding and subsequent loss of the Canada Atlantic and Plant Line Steamship Co.'s s.s. A. W. Perry, at Chebucto Head, Halifax harbor, on June 8, was held at Halifax, N.S., June 17, by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. John Fleming and D. Stewart as nautical assessors. In his evidence the master of the vessel, A. Ellis, stated that he was on the bridge from midnight, and had experienced thick weather from leaving Boston, and soundings were taken continually, being in charge of the boatswain, who simply let out the line and did not apply the tube, and with certain deductions the approximate depth was found. He heard two blasts of a horn, and was under the impression it was the lightship; although he had nothing to base himself upon in that assumption, having no nautical books on board which would show that. Assuming that it was the lightship he shaped a course n.w. by w. and then n., going half speed, at about 5 or 6 miles, though he did not know the exact speed. The scrap log demonstrates the distance shown on the log, and at certain times the approximate depth of water. At about 4.45 a.m., feeling slightly in doubt, he slowed his vessel down, and almost immediately after put her full speed astern; but she touched bottom within a minute or so, still carrying a little headway. The weather at the time was very thick, with a light easterly breeze blowing, although there was no swell. He had not seen any lull of the land nor heard any sea breaking on the beach, nor any echo of his whistle, which was being sounded in accordance with the rules of the road. On the bridge with him, were the first officer and lookout. The engines were put full speed astern just previous to and subsequent to the grounding, and finding she would not float off a wireless call for assistance was sent, and within 10 minutes the s.s. Atlantic was alongside and the passengers were put aboard, and about 10 o'clock a salvage vessel came alongside and began to unload the cargo in the forward holds, the crew having been engaged in jettisoning empty crates previous to its arrival. The proper instructions were issued, although that fact was not elicited from the master's examination, to the engineer, who stated that he was ordered to pump water out of no. 2 tank, so that the vessel might be lightened; but it was of no avail. The mate, Michael Kane, corroborated the master's evidence, stating that he was very careful to see that the soundings were taken every 5 minutes, and due entry made in the scrap log, which was the only log kept on board, pertaining to the navigation of the vessel. The official log was lost, having been left in the purser's office. The second officer, G. A. Smith, who holds a license as master of a tug, claims he had nothing to do with the navigation of the vessel, and could not throw any light on the courses during his watch, from 12 to 4. The first and second engineers produced their scrap log, showing the movements of the engines prior to and at the time of the grounding, which corroborated the master's statements, while the lookout testified that he heard two blasts blown on a fog horn, and reported same to the master, and the quartermaster stated that the ship steered well, and the courses given that night and morning were properly steered. C. Brister, salvor, testified to the fact that he rendered assistance in salving the cargo; but owing to the peculiar construction of the vessel it was impossible to get close enough at low tide to land a pump in order to relieve the flow of water which began to make in the forward hold shortly after ten o'clock.

The court finds that the master certainly neglected to take the ordinary precautions or use sound judgment in the navigation of the vessel, especially in view of the fact that he had encountered thick weather from the time of leaving Boston. The scrap log shows very great differences exist between the measurements of the line on which he based himself to ascertain the depth of water, indicating by the course he followed that he found himself pretty near Pennant Point, and steered south for 5 or 6 miles; but in the course of his soundings, numerous as they were, there was no actual indication of the exact depth of the water, as they were purely approximate. In the court's view, Capt. Ellis, upon finding himself in shoal water, as his measurements indicate, should have stopped his vessel and adopted the proper measures of ascertaining the soundings which were necessary in order to find his position. Moreover, finding himself in a position which appeared very doubtful, he should have stopped his ship and found out the nature of the bottom, by throwing over an iron lead, which he neglected to do. It does not seem that observations were taken by solar or lunar methods to ascertain the deviation of his compass, it apparently being taken for granted that the compass was only an eighth of a point out on certain courses, and in view of this it seems that more care should have been taken by the master to see that no iron which might be included in the cargo was stowed where it might have affected the compass, whereas it seems he was in total ignorance of the fact that there was some iron on board. This sounds very strange. The master does not appear to have realized the grave responsibility which rested on his shoulders, in having the care of the lives of the 45 passengers and 138 of a crew in his charge, and it is providential that no lives were lost, as had the wind been at all boisterous at the time it is difficult to say what might have happened. In view of the circumstances, and the methods adopted by the master, which cannot be said to be otherwise than extremely negligent and careless, the court suspends his certificate for 5 months, from June 18 to Dec. 18, without the option of a lower grade certificate being issued. The other officers of the vessel are relieved of all responsibility in connection with this accident, as they had nothing to do with the navigation, unless their services were requisitioned by the master, who was in sole charge of the navigation from midnight to the time of the casualty.

### Mainly About Marine People.

**James Carruthers**, President, Canada Steamship Lines, Ltd., Montreal, has given \$100,000 to provide machine guns for overseas service.

**Miss E. M. Ross**, daughter of W. G. Ross, Chairman, Montreal Harbor Commissioners, was married at Woodlands, Que., June 3, to H. McD. Brown.

**Sir E. L. Fletcher**, who was knighted by the King, June 1, for his services in connection with the transport of troops, is one of the Managers of the White Star Line in England.

**Albert Ballin**, Director General of the Hamburg American Line, who was reported to have been removed to a neurological institute at Frankfurt, Germany, denies the report, so apparently it is at least premature.

**Miss M. L. Weller**, daughter of J. L. Weller, M. Can. Soc. C.E., Engineer in Charge, Welland Ship Canal, was married at St. Catharines, Ont., June 23, to E. P. Muntz, one of the Resident Engineers on the Welland Ship Canal.

**Sir Edgar Bowring**, who was created a knight bachelor on the occasion of the King's birthday, June 3, is a member of the shipowning firm of Bowring and Co., St. John's, Nfld., and Liverpool, Eng., and has been for many years a member of the Newfoundland Legislative Council.

**Sir Archibald Denny**, of W. Denny and Bros., shipbuilders, Dumbarton, Scotland, has been re-elected President of the Institute of Marine Engineers, for the current year. He is the third member of the family of the present generation to occupy the position, and a son of the President of 1901-02.

**Capt. Alex. Milligan**, who died of paralysis at St. Catharines, Ont., May 30, aged 57, was well known on the Great Lakes, having been a master since 19 years of age. Prior to his retirement six years ago through ill health, he had been in Montreal Transportation Co.'s service for several years.

**R. M. T. Stephens**, who was created a Companion of the Order of St. Michael and St. George on the King's birthday, is Chief of the Canadian Naval Service headquarters staff. He came to Canada in 1909, and was appointed to that position in Aug. 1914, prior to which he had been Director of Gunnery. He is a Commander in the British Navy.

**Capt. J. L. Newman**, master of Canada Steamships Lines s.s. C. A. Jaques, was killed by falling into the hold of his vessel at Ashtabula, Ohio, June 9. He was formerly in Dominion Coal Co.'s service as master of the s.s. Cacouna. He was a brother of A. H. Newman, agent, Canadian Express Co., Moncton, N.B. The funeral took place at Shediac, N.B., June 14.

**Hon. J. D. Hazen, M.P.**, Minister of Marine and Fisheries, who underwent an operation for throat trouble in the Royal Victoria Hospital, Montreal, May 4, spent some little time at Lake Placid, N.Y., as soon as he was able to leave the hospital and returned to his office in Ottawa on June 5, after which he made a short visit to St. John, N.B.

**Captain Hailey**, who was in command of the C.P.R. s.s. Empress of India when she was operating on the Pacific Ocean, and subsequently when she was being utilized by the British Government as a hospital vessel, has, since the sale of the vessel to the Maharajah Scindia of Gwalior, been appointed to the command of the C.P.R. s.s. Lake Manitoba in the Atlantic service.

**Green's Marine Directory of the Great Lakes.** The seventh edition of this directory, which was formerly issued by Mitchell and Co., contains complete information regarding the construction of United States and Canadian vessels, with their owners, etc., and also has lists of the steamship companies operating on the Great Lakes, with information concerning grain elevators, harbors, coal and ore docks, etc. An interesting feature is the collection of historical facts concerning the Great Lakes and the canals and other connecting waters, with details of early navigation. The book consists of 458 pages, 9 by 6 ins., bound in cloth, and is issued by F. W. Green, Rockefeller Building, Cleveland, Ohio, at \$5.

**Marine Losses.** Lloyd's returns for three months ended Dec. 31, 1914, show that 212 steamships and sailing vessels, of 320,030 gross tons, were lost, condemned, etc. Of these, 74 vessels of 165,196 tons were sunk by warships or mines. The British percentage of lost vessels, was 0.86, and of the other owning countries, Denmark 1.16, France 0.91, Germany 0.60, Norway 0.87, Russia 0.73, and Sweden 1.43.



### Atlantic and Pacific Ocean Marine.

The crew of the s.s. *Voltaire*, who struck work at Montreal, June 8, for increase of pay, on account of the increased danger of the trip, were granted an increase of \$5 a month.

The C.P.R. has contributed £250 to the fund which is being raised in England for the relief of those dependent on persons who lost their lives in the destruction of the s.s. *Tunisiana* by the Germans.

The Thomson Line s.s. *Iona*, while bound from Middlesbrough, England, to Montreal, was torpedoed by the Germans, in the North Sea, June 3. There were no passengers aboard. The captain and crew were landed safely at Kirkwall, Scotland.

The s.s. *Cheltonian*, which struck a rock off Cape Ray, Nfld., May 24, was under charter to the Cunard Line. She put in at Sydney, N.S., where some temporary repairs were made, and then proceeded to Halifax, where she drydocked for complete overhaul and repairs.

The British steamship *Carisbrook*, under charter to McLean, Kennedy and Co., Montreal, and en route from Montreal to Leith, Scotland, was sunk by gun fire from a German submarine, in the North Sea about June 20. Reports state that 13 of the crew of 24 are unaccounted for.

The British steamship *Tunisiana*, owned by Furness Withy and Co., en route from Montreal to Hull, Eng., was torpedoed in the North Sea about June 20. She was kept afloat and was subsequently beached. She carried about 240,000 bush. of wheat and a general cargo.

The s.s. *Leuctra*, formerly owned by the Thomson Line, and operating in the Canadian trade, was torpedoed by Germans in the North Sea, June 2. She was one of a number of vessels of small tonnage, all named to commemorate Greek battles, and formed what was familiarly known as the Battle Line.

At the annual meeting of shareholders of the International Mercantile Marine Co., the retiring directors were re-elected for the current year. No annual report was presented owing to the difficulty in getting the accounts closed owing to war conditions generally. A receiver was recently appointed to safeguard the company's interests.

One of the features of the early portion of the St. Lawrence navigation season, is the number of tramp vessels coming up to Montreal. Owing to the demands for space for war materials, etc., it has been difficult to arrange for the shipping of anything but Government orders, but with the continued arrival of tramp vessels these difficulties will be minimized and gradually disappear.

A number of claims have been entered against the C.P.R. and the owners of the s.s. *Storstad* in connection with the loss of life in the running down of the s.s. *Empress of Ireland* by the *Storstad* in 1914. The time limit for the receipt of claims expired at the end of May, and it is stated that a writ of attachment has been made against the \$175,000, which was paid into court as the result of the sale of the s.s. *Storstad*, on behalf of the various claimants.

The Pacific Mail Steamship Co., a U.S. corporation, incorporated in New York in 1848, will, it is stated, dissolve during this year. The reason for this step is stated to be the recently enacted Government Seamen's Act, which goes into effect Nov. 4, and which is designed to replace cheap Oriental labor by United States union labor. It is stated that the last sailing of the company's vessel will be made from San Fran-

cisco for far eastern ports, Nov. 2, after which all of the vessels will be for sale in the open market.

The report of the British Empire Steam Navigation Co., (Furness Withy and Co.) for the year ended Apr. 30, shows trading profits of £49,902 18s. 7d. After deducting all interest and expenses, there is a balance of £32,367 13s. 2d. Of this amount £25,000 was absorbed on account of flotation expenses, leaving £7,367 13s. 2d., out of which a dividend of 10% was paid to ordinary shareholders, absorbing £6,790 8s. 3d., and the balance was carried forward. This company, which was formed Feb. 17, 1914, has vessels, including some under construction, with a deadweight capacity of 74,590 tons.

The report of the Oceanic Steam Navigation Co. (White Star Line), for 1914 shows a profit of £795,955 11s. 6d., which with interest on investments makes a total of £887,584 11s. 4d. After deducting debenture and general interest, directors' fees and income tax, and writing off £398,967 18s. 3d. for depreciation on vessels and buildings, and also half the expenses of the new debenture issue, there is a balance of £233,429 13s. 11d., which with £90,669 16s. 11d. brought forward makes a total at the credit of profit and loss account of £324,099 10s. 10d. During the year dividends were paid absorbing £262,500, leaving the balance to be carried forward.

The Russian Volunteer Fleet, which commenced a steamship service last year between Vladivostock, Russia, and Vancouver and Puget Sound ports, but which service was somewhat disorganized by the war, is completing arrangements for the re-establishment of the service on a more elaborate basis. The Russian Government has made agreements with the C.P.R., which is acting as agent for the Russian Volunteer Fleet and the Eastern Asiatic Steamship Co., providing for a through freight service, which, it is stated, grants importers and exporters facilities hitherto unobtainable, and which will enable merchants to negotiate international trade documents through banks.

Two members of a firm in Glasgow, Scotland, acting as agents for the Nova Scotia Steel and Coal Co., New Glasgow, N.S., have been sentenced to six months imprisonment for trading with the enemy. The case was considered a bad one and the sentence light for the nature of the offence. The Nova Scotia Steel and Coal Co. has issued a statement to the effect that three cargoes of ore were shipped to Germany in July last, before the war broke out, and instructions were given to divert all three vessels to Great Britain. The company succeeded in diverting two of the three, the remaining one entered Rotterdam, Holland, a few days after war was declared, when the purchasers exercised their right under the law, to possession.

In order to ensure that the requirements of the British Home Office are observed, it has become necessary for steamship companies booking passengers across the Atlantic, to examine all passengers' credentials before allowing them to board vessels on this side. The Government order is interpreted that all eastbound passengers will require to have passports, those who are friendly aliens complying with the regulations, and those who are not aliens, to prove that they are not. Photographs attached to passports or other documents should be certified by respective consuls to avoid possibility of substitution. Booking agents are instructed before issuing tickets to see that passengers are able to comply with the regulations, as those who do not comply will not be allowed on board, and the companies assume no responsibility.

### Maritime Provinces and Newfoundland.

The channel to the Government wharf at Whycocomagh, N.S., has been dredged to a width of 100 ft. and a depth of 13 ft. for about 1,100 ft., and a basin 300 x 300 ft. has been dredged in front of the wharf to the same depth. The position of the channel is marked by wooden spar buoys.

The Reid Newfoundland Co. has purchased the s.s. *Sagona* from the Newfoundland Produce Co., St. John's, for its mail and passenger service. The price paid is reported as £23,000. The *Sagona* was built at Dundee, Scotland, in 1912, and is 808 tons gross and 420 tons register.

The contract awarded some time ago by the Dominion Government to Norton Griffiths and Co., for the harbor improvements and dry dock at Courtenay Bay, St. John, N.B., has been cancelled. It is stated that the contractors were unable to proceed to the satisfaction of the Government owing to the difficulties of financing due to war conditions. Reports are current that the contract will be taken over by another concern, under arrangement with the Government.

The Canada Atlantic and Plant Line Steamship Co.'s s.s. A. W. Perry, en route from Boston, Mass., to Halifax, N.S., ran ashore at Chebucto Head, 8½ miles from Halifax, during a fog, June 8. There was about 40 passengers on board, all of whom, together with the crew, were removed safely. There was also considerable cargo. On the following day she slipped from the rocks and sank in deep water. She was built at Belfast, Ireland, in 1897, and named *Beverly*. Her dimensions were,—length 225 ft., breadth 34 ft., depth 22 ft.; tonnage, 1,601 gross, 957 register. She was screw driven by engine of 370 n.h.p.

The Dominion Coal Co.'s s.s. *Morwenna*, under charter to the Red Cross Line, was torpedoed by a German submarine, at the end of May, while bound from Cardiff, Wales, to Sydney, N.S. During last year she was operated by the Black Diamond Steamship Co., another subsidiary of the Dominion Steel Corporation, in the passenger and freight trade, between Montreal and St. John's, Nfld., and owing to the discontinuance of that business by the Black Diamond Steamship Co., for the present, she had just been chartered to Bowring and Co., for operation by the Red Cross Line in the trans-Atlantic trade. One of the crew was killed and a number injured, the latter being rescued by a Belgian trawler and landed at Cardiff. She was built at Dundee, Scotland, in 1904, and was 260 ft. long.

### Province of Quebec Marine.

The Marine Department has placed a gas buoy above St. Jean wharf in the St. Lawrence River below Quebec, to mark the wreck of the steamboat *Christine*. The light is placed 250 ft. south of the wreck and is white, automatically occulted at short intervals.

The Marine Department has issued a notice to mariners navigating the Lachine Canal, stating that at nights the lights shown on the C.P.R. swing bridge over the Canal, stating that at night the lights swing protection and a red light at both ends of the swing span when the passage is closed, and green light when open.

It is announced that the Dominion Government has settled its claim against the owners of the s.s. *Lingan* in connection with the sinking of the Government s.s. *Montmagny*, which was rammed and sunk in the St. Lawrence below Quebec, Sept. 18,



1914. An action was entered in the Exchequer Court, and \$400,000 was claimed. The amount accepted by the Government in settlement is stated to be \$100,000.

The s.s. Prefontaine, registered in Montreal, in the name of Jos. Malo, is reported to have been sold to a new company, for operation twice weekly between Montreal and Quebec, with J. O. Read as master. She is being repaired and overhauled at Montreal. She was built at Sorel, Que., in 1896, her dimensions being, length 202 ft., breadth 30.6 ft., depth 8 ft.; tonnage 899 gross, 533 register, and she is screw driven by engine of 56 n.h.p.

The Montreal City Council has abolished the fares for the ferry between the city and St. Helens Island, and has arranged with Canada Steamship Lines, Ltd., for the operation of the company's s.s. Longueuil on the route for the summer. The vessel has accommodation for about 800 passengers, and the service will cost the city \$17,730. The Mayor is reported to have outlined a proposal "to saddle the Montreal Tramways Co. with the cost when a new contract for street car service is made."

The Marine Department is carrying out a series of works with the view of raising the water levels in the St. Lawrence between Montreal and Lake St. Peter. The ship channel is to be dredged to a uniform depth of 35 ft., and compensating works are to be built near Lake St. Peter. The dredging of the channel through Lake St. Peter to 35 ft. will, it is expected, be finished by the end of the year, while the whole work will take a few years to complete. The compensating works include the erection of a dyke about 4,800 ft. long opposite Pointe du Lac, the closing of five channels through the group of islands at the head of Lake St. Peter, and the construction of a dyke about 3,500 ft. long between Ile a Bague and Ile Bellegarde.

The two parallel locks which are to be built in the St. Charles River at Quebec will be 450 x 65 ft., and will be of concrete. The dam which is under construction there is expected to be finished this year. The whole work of improving the lock accommodation, which includes dredging, the building of the new locks and the erection of a new railway and passenger bridge will, it is expected, take two years. A suction dredge has just been completed and placed in operation. Other machinery in operation on the site include a four yard dipper dredge, a gasoline launch for towing, a number of scows, 17 hoisting engines and a 30 ton crane. Quinlan and Robertson are the contractors.

Mariners are warned that owing to the construction of a dam and locks in the River St. Charles near the Canadian Northern Ry. bridge, the river channel is partly obstructed. A row of piles will be erected from about 140 ft. inside of the Quebec gap of the swing bridge, to the Quebec shore, extending about 600 ft. down the river at right angles to the bridge, the lower part being marked by a pier covered at high water, from which a fixed white light erected on a pole will be exhibited. The channel is on the right hand side of the light when going up. A caisson is being sunk on the north or Limoilou side, obstructing the northern channel through the bridge. Vessels should pass towards the Quebec side of the swing bridge within a line from the pier with light to the shore end of the Quebec side gap in the swing bridge.

The Quebec Board of Trade sent a deputation to the Government, June 2, asking for extensive improvements in the harbor, and for a 10c rate on wheat carried over the National Transcontinental Ry. from Winnipeg to Quebec, with a proportionate

rate on the eastern section to St. John and Halifax. In the improvements asked for are a 10,000,000 bush. grain elevator and additional docking accommodation for 15 ocean going vessels. Sir Robert Borden stated, in replying to the arguments, that such improvements were, for the present, restricted by the difficulty in raising the necessary money, and any such must be confined to the actual present needs. A large sum would have to be spent for the equipment of the N.T.R., and the volume of traffic both east and west would help to fix the rate to be charged. He also stated that the Government had spent over \$25,000,000 in and around Quebec in the last four years.

### Ontario and the Great Lakes.

A hopper barge, No. 3, was launched at Collingwood, June 19, for the Dominion Government.

The Public Works Department is having built at Collingwood, a steel steam hopper scow for use in connection with the dredging operations in the St. Lawrence River.

Canada Steamship Lines s.s. Turbinia, is undergoing overhaul and repairs at Kingston, after which, it is stated that she is to be sent to the Atlantic coast under charter.

The United States War Department has awarded the contract for cement masonry on lock 4 of the Sault Ste. Marie canal to O. Daniel, Chicago, Ill., for \$1,010,048.

Canada Steamship Lines motor vessel Fordonian broke her crank shaft above Whitefish Point, June 17, and was taken to Port Huron. She was eventually taken to Port Colborne, where repairs were made.

Forwarders, Ltd., Kingston, have chartered their steamships Port Colborne, Port Dalhousie and W. H. Dwyer to the International Paper Co., and these vessels will run into Portland, Me., during the summer.

Gas buoy no. 9 at Round Island, Lake Huron, has been moved to the end of the shoal north of the island, and placed in 19 ft. of water. It is spar shaped with an occulting white light of 120 c.p., 13 ft. above water.

The Reid Wrecking Co. is renewing its attempts to raise the United States lightship 82, which was lost off Point Abino, in Lake Erie, in Nov., 1913. The work, which was taken in hand last autumn, had to be abandoned owing to the storms.

Work was started on the drilling of the undredgable material at the bottom of Lake Ontario at the Port Weller entrance to the Welland Ship Canal. It is stated that the work will take three years. J. Manley, Merriton, Ont., has the sub contract.

The Great Lakes Transportation Co. commenced a direct trans-Atlantic service from the head of the lakes recently, when its s.s. Glenfoyle left Fort William with 122,000 bush. of grain for Manchester, Eng. It is interesting to note that neither port can be considered an ocean one.

The underwriters received tenders, June 15, for the raising of the s.s. Charles S. Price, one of the United States vessels lost in the great storm on the Great Lakes in Nov., 1913. It is believed that it is possible to raise the vessel, but tenders which were invited on two previous occasions were all considered unsatisfactory.

The Department of Trade and Commerce has asked carriers by the lake route from the head of the lakes to Montreal to quote prices for the transportation of 1,000,000 bush. of wheat between the points named. This grain has been purchased by the Dominion Government for New Zealand, and it is hoped to ship it from Montreal.

The Department of Marine is reported to

have chartered the steamships La Salle, Athene and Thyra for fisheries patrol service on the Great Lakes. It is stated that the La Salle will be confined to Lake Erie, the Athene to Lake Ontario and the St. Lawrence River, and the Thyra in the Thunder Bay district from Otter Head Point to the International boundary.

A large steel tug was launched at Grand Haven, Mich., June 19, for the Canadian Stewart Co., for towing barges in connection with the development work in Toronto harbor. The tug is 82 ft. long, 20 ft. beam and 10 ft. deep, equipped with a fore and aft compound engine with cylinders 16 and 34 by 26 ins., supplied with steam by a Scotch boiler 10¼ ft. diam. by 11 ft. long.

The s.s. Trevisa, which was launched at Londonderry, Ireland, in May, was specially designed and built for service on the Canadian Lakes, but owing to the demand for tonnage in British waters, she has been chartered for special services in connection with the supply of stores for war purposes. Her dimensions are, length 250 ft., breadth extreme 42½ ft., depth moulded 20 ft.

The Marine Department is building a new lighthouse on the southwest point of Battle Island, Lake Superior, consisting of a white reinforced concrete tower surmounted by a red octagonal lantern, 43 ft. high. The light is of the catoptric order of 20,000 c.p., showing three flashes at 4 second intervals every 24 seconds. It is at an elevation of 118 ft. and visible for 16 miles.

A special meeting of shareholders of Canada Steamship Lines Ltd. was held at Montreal, June 19, to authorize the directors to apply for supplementary letters patent extending the company's powers to allow it to take advantage of certain amendments to the Companies Act, made in 1914, and issue its bonds and debentures in other sums than authorized by its act of incorporation, viz., \$100 and £20.

The Duluth, South Shore and Atlantic Ry., a subsidiary of the C.P.R., the Grand Rapids and Indiana Ry. and the Michigan Central Rd., have been allowed by the Interstate Commerce Commission, to continue the joint ownership of the ferry boats operated under the name of the Mackinac Transportation Co., between St. Ignace and Mackinac City, Mich., which, otherwise, under the Panama Canal Act, they would not be entitled to do.

The U. S. Lake Survey reports the levels of the Great Lakes in feet above tidewater for May, as follows,—Superior 601.65; Michigan and Huron 579.64; Erie 571.69; Ontario 245.15. Compared with the average May levels for the past ten years, Superior was 0.30 ft. below; Michigan and Huron 1.07 ft. below, Erie 1.12 ft. below and Ontario 1.76 ft. below. It was anticipated that during June, Superior, Michigan and Huron would rise 0.3 ft., Erie 0.2 ft., and Ontario 0.1 ft.

Canada Steamship Lines' s.s. Rochester has been libelled at Buffalo, N.Y., on claims totalling \$265,000, by residents of the State of Rhode Island, who allege that during an excursion in 1913, impure water was supplied on the vessel, causing an outbreak of typhoid fever. A Canada Steamship Lines official at Montreal is reported to have stated in connection with the case, that at the time mentioned there were outbreaks of typhoid fever in several of the U. S. cities visited by the vessel, and that a number of U. S. soldiers on the vessel were taken ill, and as a result of an enquiry by the U. S. Government, the company was entirely exonerated from all blame.

The British Government and the Dominion Flour Mills Ltd., have libelled the s.s. Valcartier, owned by Lake Commerce Ltd., Toronto, for loss of cargo, as a result of a



Julius, with the s.s. F. M. Osborne in Lake Huron recently. Lake Commerce Ltd. is applying in the Federal Court at Detroit, Mich., for a limitation of liability, and denies any fault for the collision, stating that those in charge of the F. M. Osborne were incompetent and that an efficient lookout was not maintained, that she altered her course to starboard without having a passing agreement to pass port to port, and that she so passed despite a warning signal from the Valcartier. It is estimated that repairs to the vessel will cost about \$20,000, and that the total loss to the company owing to the vessel being out of business will be \$41,000.

Turret Chief, Ltd., has been incorporated under the Ontario Companies Act, with \$40,000 capital and office at Hamilton, to carry on a navigation and transportation business. The provisional directors are, A. B. MacKay, J. G. Gauld and C. V. Langs, Hamilton. The Turret Chief was owned by the Canadian Lake and Ocean Navigation Co., Toronto, and was wrecked in Lake Superior in Nov., 1913, when she was abandoned to the underwriters. She was eventually sold, salvaged and repaired and again sold to A. B. MacKay, who it is reported has chartered her for trans-Atlantic service. She was built at Sunderland, Eng., in 1896, and is of steel construction with double bottom for water ballast. She is equipped with triple expansion engines with cylinders 20, 34 and 57 ins. diam. by 39 ins. stroke, of 1,100 i.h.p., supplied with steam by two water tube boilers 12½ by 10 ft. by Babcock and Wilcox. Her dimensions are, length 253 ft., breadth 44 ft., depth 19 ft. 7 ins.; tonnage, 1,881 gross, 1,197 register.

### Manitoba, Saskatchewan and Alberta.

The Governor General in council has approved the Winnipeg and St. Boniface Harbor Commissioners' bylaws.

A gasoline boat service is being operated on Lesser Slave Lake, in the passenger service, between Grouard and Indiana, Alta., on the Edmonton, Dunvegan and British Columbia Ry. The boats, which are named Northwest and Dreadnought, have capacity for 30 passengers each, and are operated by the Northwest Transportation Co., of which J. A. Powers is Manager.

### British Columbia and Pacific Coast.

The name of the Marine Department's s.s. Falcon, registered at Victoria, B. C., has been changed to Berquist. This vessel was built at Port Moody, B. C., in 1902, and was formerly named Ruth.

The s.s. Wellington, owned by Canadian Collieries (Dunsmuir) Ltd., which has not been used for some years, is reported to have been chartered for a trip to New York with a cargo of B. C. fir.

The British Yukon Navigation Co.'s s.s. Nasutlin sailed from Dawson, Yukon, May 27, for Whitehorse, opening navigation on the Yukon River. The first vessel sailed from Whitehorse, June 1, on the regular schedule.

The All Red Line, Ltd., Vancouver, has made the following appointments on its two vessels for this year: Santa Maria, S. G. Mortimer captain, T. M. Stephens chief engineer; Selma, H. E. Lawrey captain, H. Hunter chief engineer.

H. E. Kemp, a former Secretary-Treasurer, North Vancouver Ferry Co., is taking action against the company, claiming \$2,000 for wrongful dismissal. The company alleges that he had falsified books and made wrong reports.

The Grand Trunk Pacific Coast Steamship

Co. has reduced the time taken by its steamships on the route between Vancouver and Prince Rupert, from 33 to 30½ hours. The distance is 482 nautical miles, the average run being 16 miles an hour.

Tenders are under consideration by the liquidators of the Canadian Northern Pacific Fisheries Ltd., for the purchase of the company's fleet of whaling and fishing vessels. At the time of writing, it was not known how the business would be disposed of, but it was stated that if the bids for the entire fleet were not considered satisfactory, the property would be divided and disposed of in small lots.

During May, work proceeded rapidly on the construction of the breakwater at Victoria, which is under contract to Grant, Smith and Macdonnell. During the month 7,253 tons of granite were laid and 19,022 tons of rubble were placed on the foundations extending seaward, and 1,334 cubic yards of concrete were also laid. The third crib is under construction at Rosebank, and steel is being placed on the ways for the building of the fourth crib.

A San Francisco press report of June 26 states that the Robert Dollar Steamship Co. is arranging to change five of its steamships from U.S. registry to British registry, on account of the Seamen's Act, which becomes effective Jan. 1, 1916. It is also stated that it is probable the headquarters of the company will be moved to Vancouver, B.C. Some of this company's vessels have been on the British register (Canadian) for several years, and were transferred just recently to the U.S. register, when the regulations respecting foreign built vessels came into force in the U.S.

A. Johnston, Deputy Minister of Marine, returned to Ottawa at the end of May, after a trip to the Pacific coast, when, accompanied by Col. W. P. Anderson, Chief Engineer of the Department, he inspected the port and navigation facilities there, as far north as Prince Rupert. A number of questions were dealt with on local complaints, covering additional aids to navigation, pilotage charges, the operation of gasoline boats by uncertificated men, etc., and these will be subjects for report to the Department, with recommendations.

The British Columbia Indian Commission, which reported recently on the question of the disposition of the Kitsilano Indian Reserve, has recommended that the property be handed over to the Vancouver Harbor Commission, for development along with other lands covered by the general harbor improvements in progress there. Plans have been prepared by A. D. Swan, M. Can. Soc. C.E., Chief Engineer to the Commission, and it is stated that these provide for the accommodation of the largest vessels operating on the Pacific Ocean, with ample warehouse space and railway facilities.

The C.P.R. s.s. Princess Irene, which was requisitioned by the British Admiralty at the commencement of the war, was blown up in Sheerness harbor, England, May 26, it is stated, as the result of an accident. At the time of the disaster she was undergoing an overhaul, and all the members of the crew, with the exception of one, lost their lives. She was built at Dumbarton, Scotland, was launched in July, 1914, and she was intended for the company's British Columbia Coast Service, but was taken over by the Admiralty before she was out of the builders' hands. Her dimensions were: length, 395 ft.; breadth, 54 ft.; depth 28¼ ft. A full description of the vessel and her sister, Princess Margaret, launched just previously, and also taken over by the Admiralty, was given in Canadian Railway and Marine World for Aug., 1914.

### Stranding of the s.s. Cheltonian.

An investigation into the causes of the stranding of the British s.s. Cheltonian near Cape Ray, Nfld., May 23, was held at Halifax, N.S., June 18, by Capt. L. A. Demers, Dominion Wreck Commissioner, and the following judgment, concurred in by Capt. John Fleming and D. Stewart, as nautical assessors, was delivered: The court, having carefully reviewed the evidence submitted by the master, which was very intelligently set forth, finds that up to the moment of and prior to the stranding the vessel was navigated in a proper and seamanlike way; but we are of opinion that when Bird Rock was not seen, nor the whistle there heard, it was the duty of the master to have taken frequent soundings, and make absolutely certain, by the various means at his disposal, of the exact position of his vessel, which he failed to do. We regret to say that he took too much for granted, and omitted the minor details which prudence and good navigation required. Therefore, owing to these omissions, which we cannot overlook, we censure the master, Richard Jones, for this error of judgment; but under the circumstances the court must say that it is very much impressed by the fact that he brought his vessel, which had a valuable cargo on board, back to Sydney, and subsequently to Halifax for repairs, under very adverse conditions, as the engines and boilers were out of alignment, and the holds were not free from water. This was indeed a gigantic task and the captain, engineer and assistants deserve unstinted praise for their successful efforts in this connection. In view of these circumstances we have pleasure in complimenting the master upon his actions in saving the vessel and her valuable cargo; and we also compliment the chief engineer for the marvellous work which he performed in nursing the engines so that they answered the demands and trials to which they were subjected.

**Beeson's Marine Directory.** The 29th issue of this publication maintains the high standard of previous years regarding the classification of the Canadian and United States vessels operating on the Great Lakes, and also the collection of interesting information connected therewith. There are included in the volume descriptive details of Canadian harbors on the Upper St. Lawrence, the Great Lakes, Georgian Bay, etc., which are published under the authority of the Minister of Marine. The book consists of 288 pages, 10 by 7 ins., bound in cloth, and is published by Harvey C. Beeson, 732 South Sherman St., Chicago, Ill., at \$5.

**The Erie Rd.,** in pursuance of the order of the Interstate Commerce Commission and of the Panama Canal Act, is taking steps to divest itself of its lake steamship holdings, and has sold four of its eight lake steamships to W. G. Davidson, New York. It is stated that the vessels sold cost on an average, \$200,000, and that the price realized is \$600,000 for the four. It is announced that the vessels will be taken to New York, two being placed in the coast trade and two being used for trans-Atlantic routes. They will have to be cut in two in order to pass the locks of the Welland Canal.

**The Great Lakes Red Book,** 4¼ by 3 ins. published by the Marine Review, Cleveland, Ohio, at \$1, is a handy vest pocket reference book containing a list of over 1,000 vessels operating on the Great Lakes, with the names of owners, captains and engineers. The vessels are classified in a unique manner whereby quick reference can be made for the information desired.



### Additional Steamship for Canadian Pacific Railway Atlantic Service.

The Canadian Pacific Ry. has purchased the s.s. Frankmount from the Palace Shipping Co., Liverpool, Eng., and has changed her name to Medora. She is being thoroughly overhauled at Belfast, Ireland, and we are advised that she is very similar in type to the C.P.R. steamships Missanabie and Metagama, which have been put into service recently on the C.P.R. Montreal and Liverpool freight and passenger service. A full description of these latter vessels was given in Canadian Railway and Marine World for Aug. 1914, pg. 388.

The s.s. Medora was built at Port Glasgow, Scotland, in 1912, and has steel hull, two steel decks, is classed 100 A1 at Lloyd's, and is equipped with triple expansion engines with cylinder 25, 42 and 70 ins. diam., by 48 ins. stroke, 477 n.h.p. She is an up to date vessel, with electric lighting equipment and all the modern life saving and other appliances.

### Telegraph, Telephone and Cable Matters.

The Association of Railway Telegraph Superintendents held its annual convention at Rochester, N. Y., June 22 to 25, when a number of papers on a variety of subjects concerning the construction and operation of railway telegraph systems were read and discussed.

The U. S. Circuit Court of Appeals has confirmed the judgment of the lower courts in granting a preliminary injunction against the DeForest Radio Telephone and Telegraph Co., the Standard Oil Co. of New York and L. DeForest, restraining them from infringing the fundamental Marconi and Lodge patents.

The Great North Western Telegraph Co. has opened offices at Bala Park, Lake Joseph, Niagara Military Camp, Port Cockburn, Queens Royal Hotel, Niagara on the Lake, Rosseau, Sparrow Lake, Ont., Richmond and Valcartier Camp, Que.; and has closed its offices at Rosebank, Man., Allanburg, Banning and Teeswater, Ont., St. Cesaire Station, Que., and Mikado, Sask.

R. N. Young, Superintendent, C. P. R. Telegraphs, British Columbia Division, returned to Vancouver recently after an inspection trip through the Kootenay District. He stated that telegraph communication would soon be opened along the Kettle Valley lines between Midway and Merritt, thus practically completing the company's service in the interior. There is now a direct wire from Vancouver to Penticton and Kelowna, connecting up the lower Okanagan district.

The New Brunswick Telephone Co.'s earnings for the year ended Mar 31 were \$455,066.53, against \$422,700.45 for the previous year. During the year dividends totalling 6% were paid, and a 1% bonus for the year was paid Apr. 15. The board for the current year is,—President, S. H. White; First Vice President, Hon. F. P. Thompson; Second Vice President, Lieut.-Col. Black; A. W. Bennett, H. P. Robinson, F. B. Carvell, M.P., F. W. Sumner, E. O'Leary, Lieut.-Col. J. L. McAvity, R. B. Emerson, J. M. Robinson, G. W. Ganong, L. B. McFarlane, A. R. Slipp and W. B. Snowball.

**Western Crops.** The C. P. R. estimates the acreage under crop in the prairie provinces this year as follows,—Wheat 12,809,000, an increase of 22%; oats 6,963,000 an increase of 12%; barley 2,224,000 an increase of 15%; flax 864,000 a decrease of 14%; total acreage 22,860,000 an increase of 16%.

### Among the Express Companies.

O. E. Ford, formerly agent, Western Ex. Co., Spokane, Wash., has been appointed route agent, Dominion Ex. Co.'s Pacific Division.

F. H. Hill, heretofore messenger, has been appointed agent, Dominion Ex. Co., at Kelowna, B. C., vice C. E. McIntyre resigned.

The Dominion Ex. Co. has opened offices at Little Bras D'Or, N. S., Iona, Ont., Horizon, Eastend, Raycraft, Regina Beach, Sask., Hayter and Waldo, Alta.

The Canadian Ex. Co. having placed its service on the St. John and Quebec Ry., now being operated as part of the Canadian Government Railways, has opened offices at Centreville, Lakeville, Meductic, Roseborough and Woodstock, N. B.

### Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

**The West Disinfecting Co.,** New York, announces that it will erect a manufacturing plant at Montreal to be in operation early in the autumn.

**The International Nickel Co.** 43 Exchange Place, New York, N. Y., has issued a booklet "Monel Metal" describing its properties, uses, etc.

**Independent Pneumatic Tool Co.,** Chicago, has appointed G. C. Wilson Manager of its Atlanta, Georgia, Branch, vice F. H. Charbono, transferred to Boston, Mass.

**Franklin Railway Supply Co.,** 30 Church St., New York, N.Y., has issued a catalogue describing and illustrating its automatic driving box lubricator for lubricating driving journals with grease instead of oil.

**The Rail Joint Co.,** New York, N.Y., announces that it has received the only medal of honor awarded by the Panama-Pacific International Exposition at San Francisco for rail joint products in the transportation department.

**The Dominion Iron & Steel Co.'s** order from the South African Government Railways for rails, referred to in Canadian Railway and Marine World for June, is for about 25,000 tons of 80 lb. sections and about 10,000 tons of 60 lb. sections. The rails will be shipped from Sydney, N.S., during the next few months.

**B. J. Coghlin Co., Limited,** manufacturers of railway supplies, Montreal, have issued an 85 pg. catalogue covering a wide range of railway accessories including springs for locomotives, tenders, passenger and freight cars, and electric railway cars, waggons,

trucks, cranks, etc., also a full line of track tools, including guy rods, ground anchors, tie plates, rail braces, and wrecking chain.

**M. Beatty & Sons, Ltd.** received an order on May 29 from the War Purchasing Commission at Ottawa for 5 carloads of material handling machinery, consisting of hoisting engines, derrick irons, turn tables, centrifugal pumps and clam-shell buckets for use by the Canadian Overseas Railway Construction Corps in Europe. The goods went forward, June 1, knocked down and packed for ocean shipment.

**John Bertram & Sons Co., Ltd.,** machine tool manufacturers, Dundas, Ont., have offered to the Dominion Government the free use of the Wilson residence property in Dundas, which the company owns, as a home for convalescing soldiers for whatever time it may be required. The house, which has a broad verandah, is situated in about an acre of ground which is shaded by large elms and well supplied with fruit trees. It will accommodate from 30 to 40 men.

**American Steel Foundries, McCormick Building, Chicago,** has issued a unique calendar for 12 months commencing June, 1915. Each sheet contains a calendar for three months, viz., the current month in the centre of the sheet and the previous and coming months above and below it respectively. At the end of each month the entire sheet can be torn off with the result that the ensuing current month will have the centre position on the sheet with the past and coming months in plain view.

### Transportation Conventions in 1915-16.

July 13-16.—International Railway General Foremen's Association, Chicago, Ill.

July 13-16.—American Railroad Master Tinner's, Coppersmiths and Pipefitters Association, Chicago, Ill.

July 19-21.—American Railway Tool Foremen's Association, Chicago, Ill.

July 21.—American Association of Demurrage Officers, Milwaukee, Wis.

Aug. 17.—International Railroad Master Blacksmiths' Association, Philadelphia, Pa.

Aug. 19, 20.—American Association of Railroad Superintendents, San Francisco, Cal.

Sept. 14-16.—Roadmasters' and Maintenance of Way Association, Chicago, Ill.

Sept. 14-16.—Master Car and Locomotive Painters' Association of the United States and Canada, Detroit, Mich.

Sept. 14-17.—Railway Signal Association, Salt Lake City, Utah.

October.—American Association of Dining Car Superintendents.

Oct. 4, 5.—American Association of Traveling Passenger Agents, Boston, Mass.

Oct. 4-8.—American Electric Railway Association, San Francisco, Cal.

Oct. 5-7.—Railway Fire Protection Association, Chicago, Ill.

Oct. 13-15.—American Association of Railway Surgeons, Chicago, Ill.

Oct. 19-21.—Maintenance of Way and Master Painters' Association of the United States and Canada, St. Louis, Mo.

Oct. 19-21.—American Railway Bridge and Building Association, Detroit, Mich.

Dec. 7-10.—American Society of Mechanical Engineers, New York, N.Y.

Jan. 18-20, 1916.—American Wood Preservers' Association, Chicago, Ill.

March 21-23, 1916.—American Railway Engineering Association, Atlantic City, N.J.

May 2-5, 1916.—Air Brake Association, Atlantic City.

June 28, 1916.—Association of American Railway Accounting Officers, Detroit, Mich.

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Roofings  
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Write Nearest Branch for Catalog No. 252.

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## Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

Canadian Car Service Bureau—J. Reilly, Manager, 311 St. Nicholas Building, Montreal.

Canadian Electric Railway Association—Acton, 1000, 75 Third Street, Toronto.

Canadian Freight Association (Eastern lines)—G. A. Ransom, Canadian Express Building, Montreal.

Canadian Freight Association (Western lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.

Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday each month, 8:30 p.m., except June, July, and August.

Canadian Society of Civil Engineers—C. H. McLeod, 176 Mansfield St., Montreal.

Canadian Ticket Agents' Association—E. de la Hénée, London, Ont.

Central Railway and Engineering Club of Canada—C. L. Worth, 409 Union Station, Toronto. Meetings at Toronto, 3rd Tuesday each month, except June, July, and August.

Canadian Marine Association—F. King, Counsel, Kingston, Ont.

Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers' Club of Montreal—R. W. H. Smith, Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.

Express Traffic Association of Canada—W. H. Burr, Chairman, Toronto.

Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.

Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.

International Water Lines Passenger Association—M. R. Nelson, New York.

Niagara Frontier Summer Rate Committee—James Morrison, Montreal.

Nova Scotia Society of Engineers—A. R. McCleave, Halifax, N.S.

Quebec Transportation Club—A. F. Dion, Quebec.

Ship Masters' Association of Canada—Capt. E. Wells, 45 St. John Street, Halifax, N.S.

Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.

Western Canada Railway Club—Louis Kon Box 1707, Winnipeg. Meetings at Winnipeg, 2nd Monday each month, except June, July, and August.

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Complete shop outfit consisting of One 10x15 Iron Shaper. One Pedestal Emery Stand. One 20 in. Square base Champion Drill. One 14x28 Fay & Scott Extension Gap Lathe. One 8 h.p. Gasoline Engine. Together with belting, shafting, hangers and pulleys. This machinery in first class condition.

Box 5404

Canadian Railway & Marine World



## DEPARTMENT OF THE NAVAL SERVICE.

### TENDERS FOR LIFE SAVING STATION.

SEALED TENDERS, addressed to the undersigned and endorsed "Tender for Life Saving Station," and accompanied by cheque for 10 per cent. of the amount of the tender, will be received up to noon on Friday, July 9th, 1915, for the construction of new buildings for the Life Saving Station at Point Pelee, on Lake Erie, Ontario.

Forms of tender, with plans and specifications, may be obtained on application to the undersigned.

The plans and specifications will also be exhibited in the offices of the District Engineers, Department of Public Works, Toronto and Windsor, and at the present Life Saving Station, Point Pelee.

G. J. DESBARATS,

Deputy Minister of the Naval Service,  
Department of the Naval Service,  
Ottawa, June 15th, 1915.

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The more carefully you analyze your requirements—the more exhaustively you compare qualities of wire claimed to meet those requirements—the more certain will you be to adopt as Standard the products of Northern Electric.

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**FERGUSON SHOP FURNACES**  
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Round Trip,  
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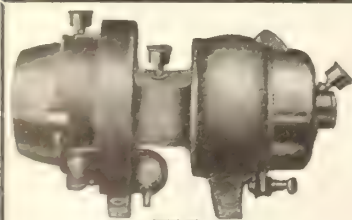
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270 days without any expense for repairs. As a result of this exceptional service 150 more have just been ordered.

**The HIRAM L. PIPER CO., Limited**

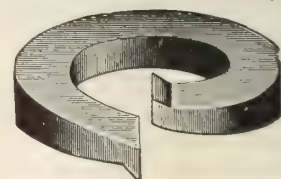
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Brass Wearing Parts for Locomotives. Journal Bearings for Freight and Passenger Service. BABBITTS. Miscellaneous Brass Castings for Railroads.

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**The Positive Lock Washer**  
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We also make plain coils and tail nut locks

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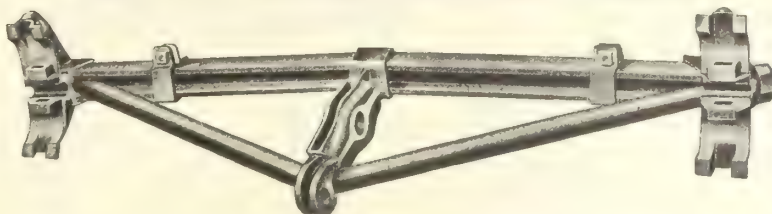


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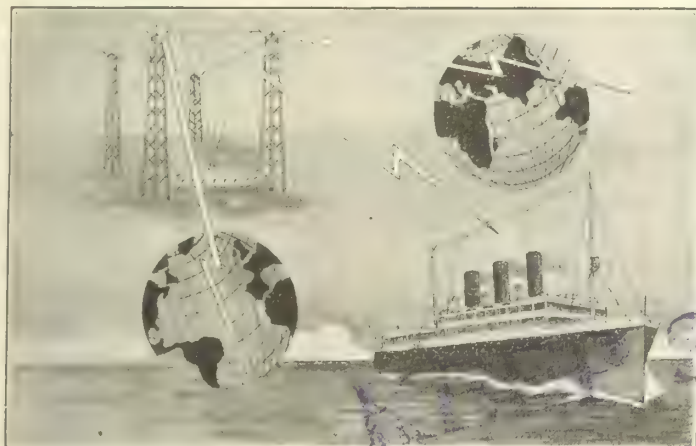


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Ship sets suitable for liners, yachts, tugs, freighters and scows our specialty.

Have you considered the advantage of connecting up factory or mine to head office by wireless? We will sell or rent you a system to cover all your requirements.

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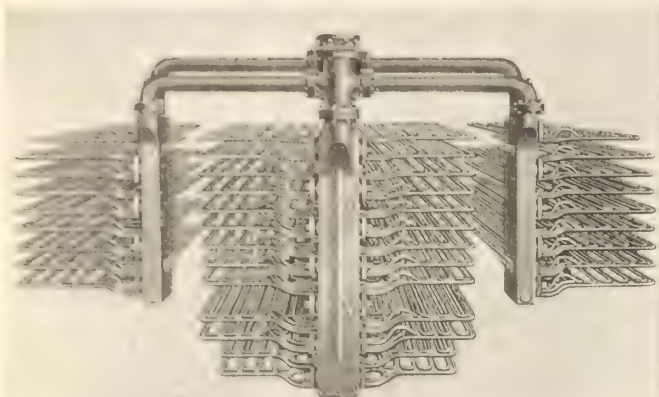
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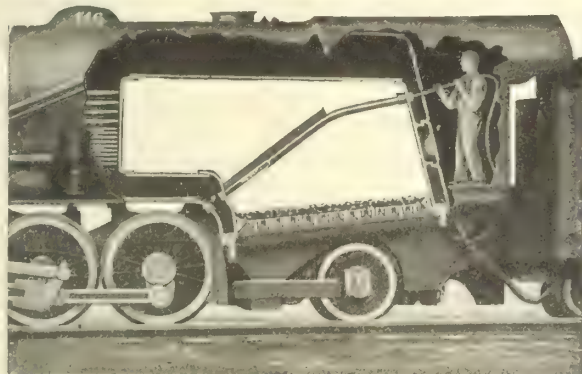
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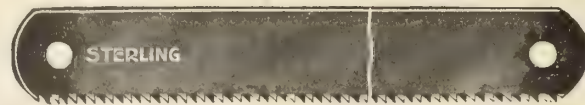
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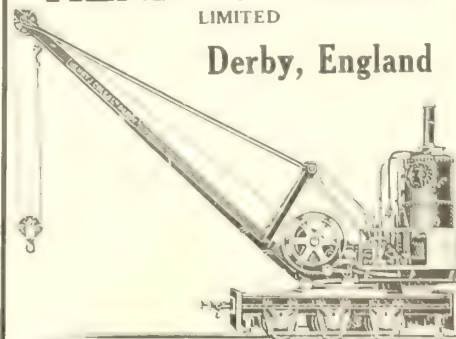
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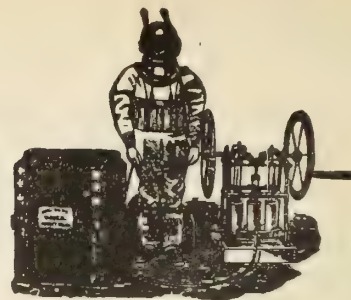
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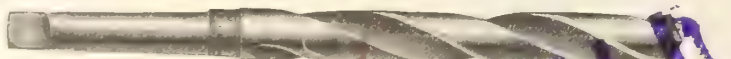
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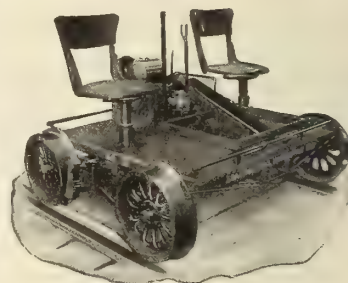
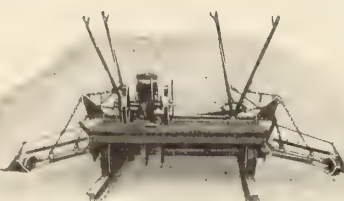
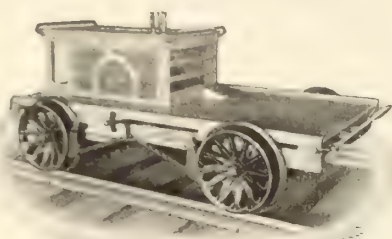
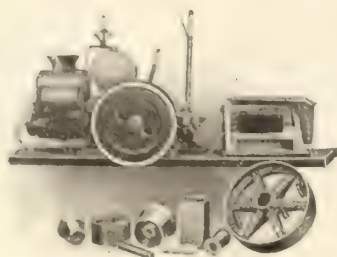
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The illustrations herewith show a sectional view of a four feed tank, also a four feed lubricator, installed on a switching engine which shows the device complete, and location of regulating valve and check valve.

The Pendulum Type Lubricator actually **pumps** the oil to the feed nozzle on the flange and operates in the following manner:

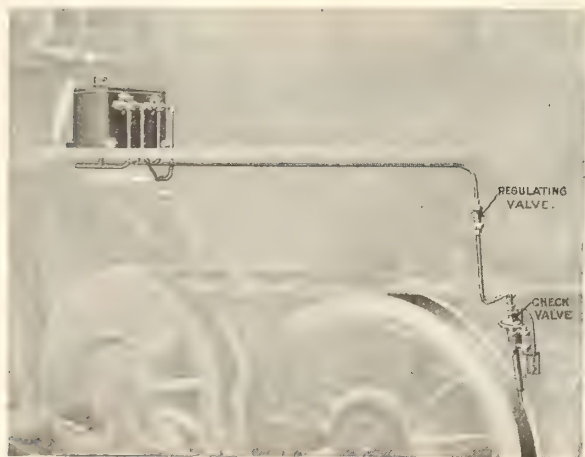
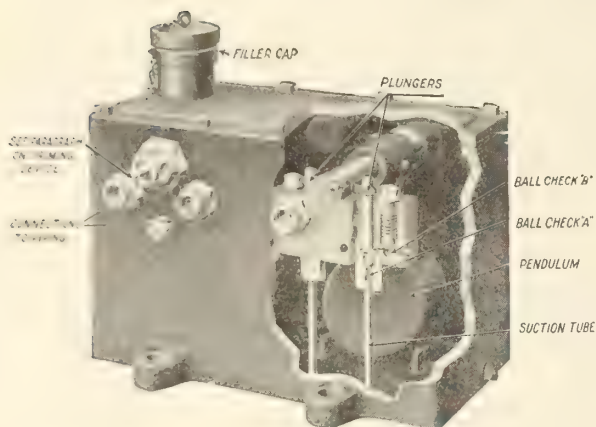
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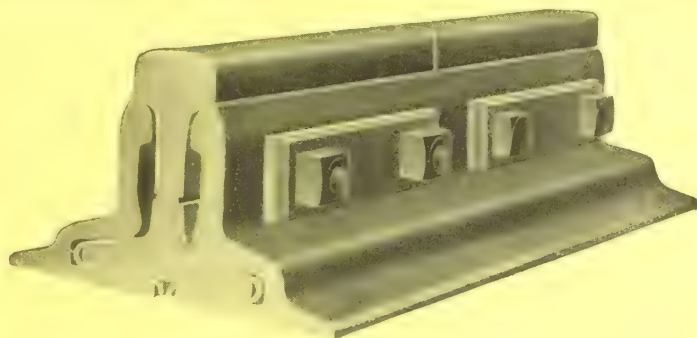
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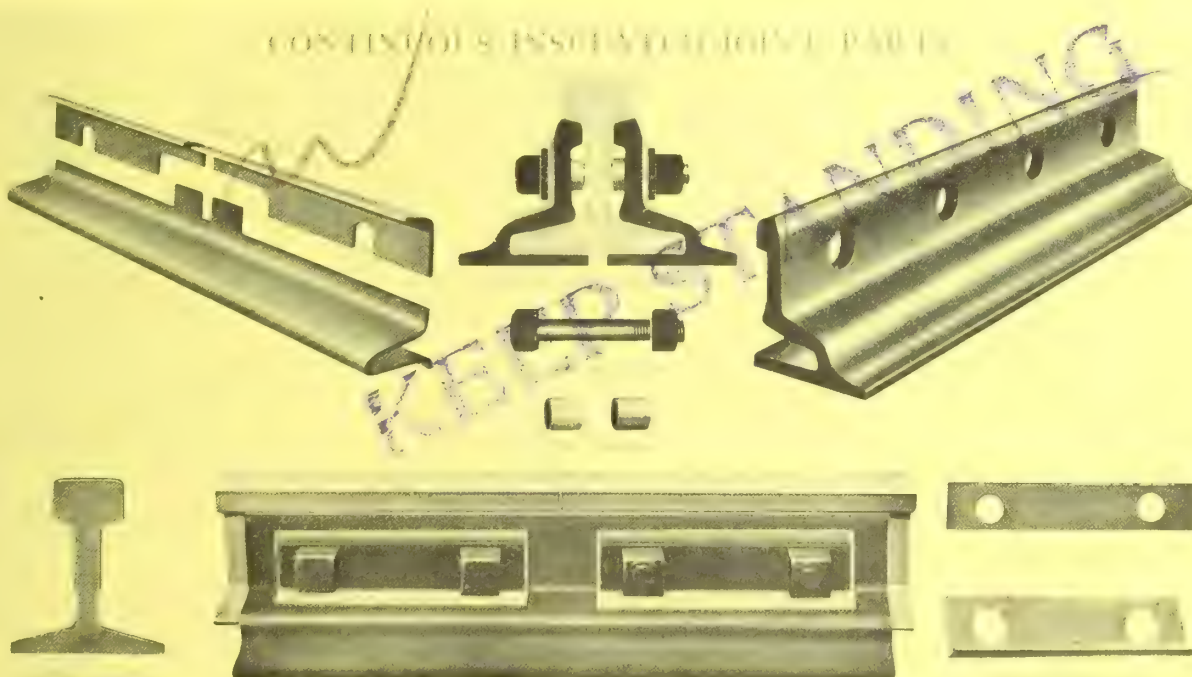
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MADE IN CANADA FOR FIFTY YEARS

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FOR MACHINING  
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# Canadian Railway AND Marine World

ESTABLISHED 1898.

Number 210

TORONTO, CANADA, AUGUST, 1915

Subscription Rates, Page 309



## BERTRAM MACHINE TOOLS



### 42-inch Vertical Boring and Turning Mill

(NILES TYPE)

MOTOR DRIVEN THROUGH  
SPEED BOX.

BUILT IN SIZES FROM  
42-INCH TO 100-INCH  
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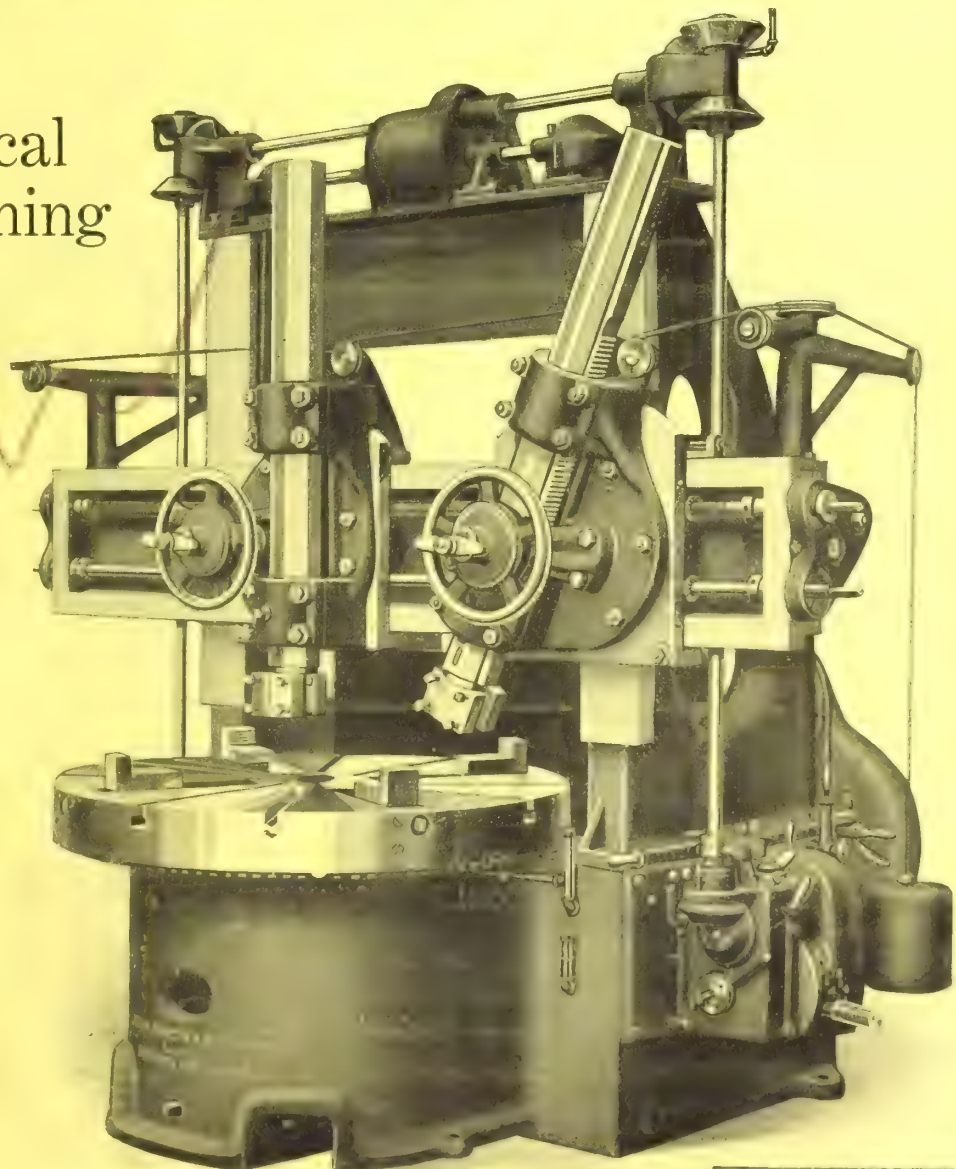
The John Bertram  
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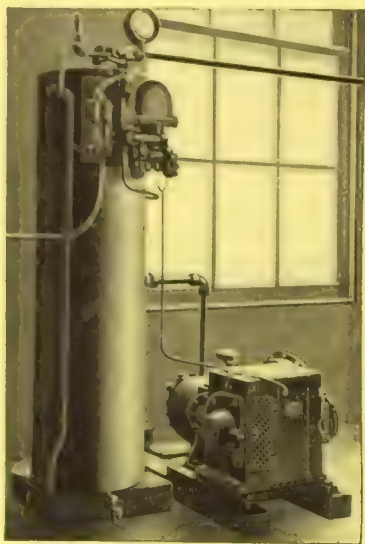
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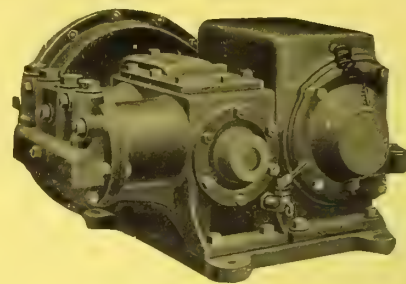


These simple, reliable, compact, durable  
and easily operated—



A Westinghouse Motor-Driven  
Compressor Installation.

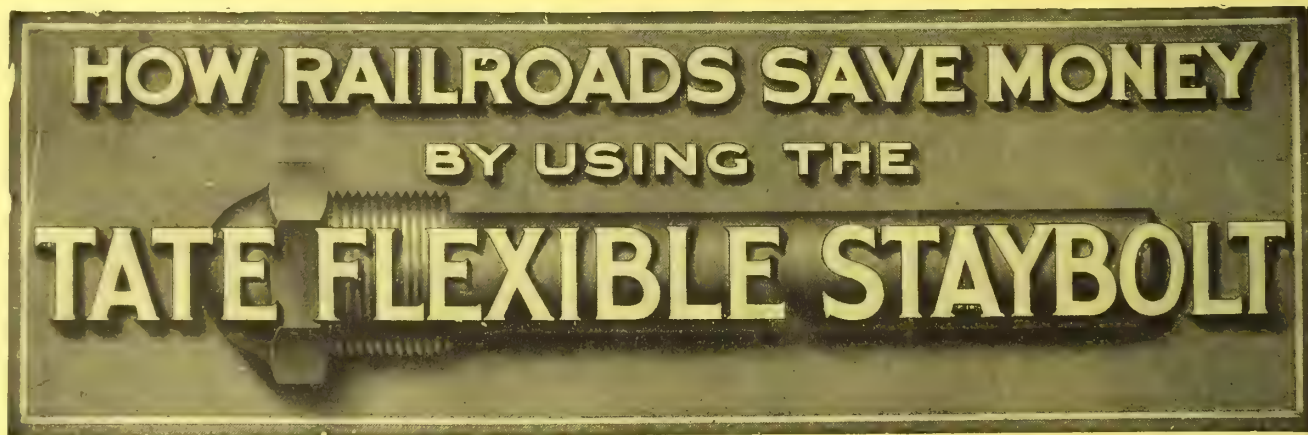
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are built in four standard capacities rated at  $14\frac{1}{2}$ , 25,  $37\frac{1}{2}$  and 50 cubic feet of free air per minute, and fitted with a 600 volt D.C. Motor. If desired we fit them with D.C. Motors of 110 and 220 volts, or with polyphase A.C. Motors for 100, 200, and 400 volts, 25 or 60 cycle, and single phase motors for 60 cycle service.

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# Meeting One Financial Obstacle to Adequate Signal Protection

There is little doubt that there would be a tremendously greater amount of mileage protected by automatic block if first cost were the only difficulty to be encountered. The great difficulty, however, in the universal use of fixed automatic block signals is found in the continuous cost of maintenance.

The advantage in this respect of

## Simmen Automatic Block Cab Signals



is shown by the fact that none of the four roads which are operating the Simmen System have found it necessary to provide any special organization or additional labor for inspection purposes.

The reason for this is that the track and overhead installation of the Simmen System is so simple (involving no apparatus along the track except standard telephone overhead construction and simple signal rails) that the regular track and line maintenance labor is ample to care for these elements.

All operating electrical apparatus is either in the cab or in the dispatcher's office.

The cab apparatus is easily inspected when the car is in for regular inspection.

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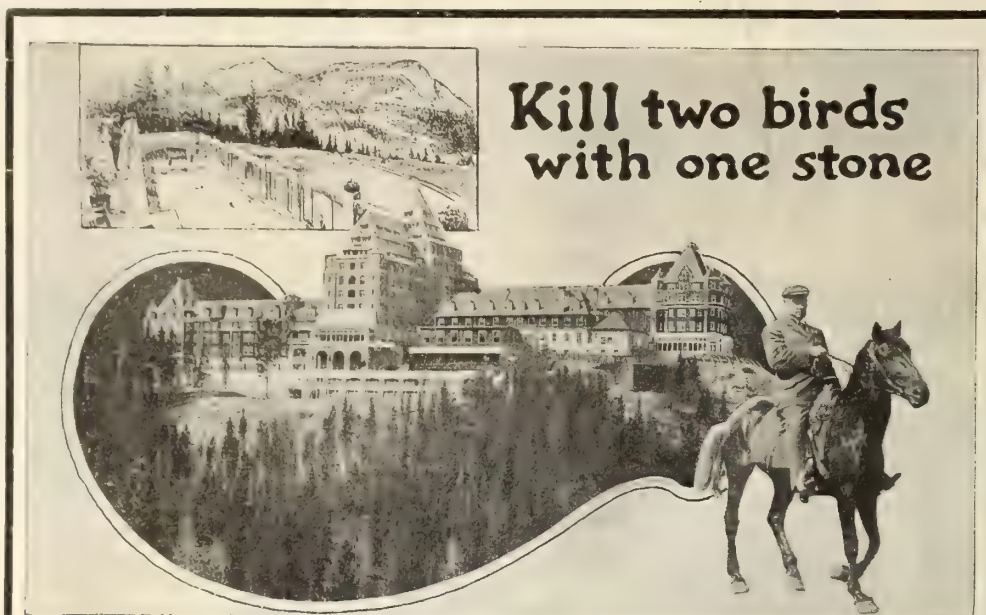
This enormous comparative saving in maintenance costs is proved by the experience of the four roads on which the **Simmen System** is now, and has for some time been, standardized.

The importance of this fact in any signal installation is obvious.

## THE NORTHEY-SIMMEN SIGNAL CO., Ltd. TORONTO

Simmen Automatic Railway Signal Co., Buffalo





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# **CANADIAN ROCKIES**

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## **PANAMA PACIFIC EXPOSITION**

If you are planning your 1915 trip to San Francisco, make sure your ticket reads via Canadian Pacific, otherwise you will miss the grandeur beauty of nature's most stupendous works—The Canadian Rockies.

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Agents will personally call on you to arrange your itinerary.

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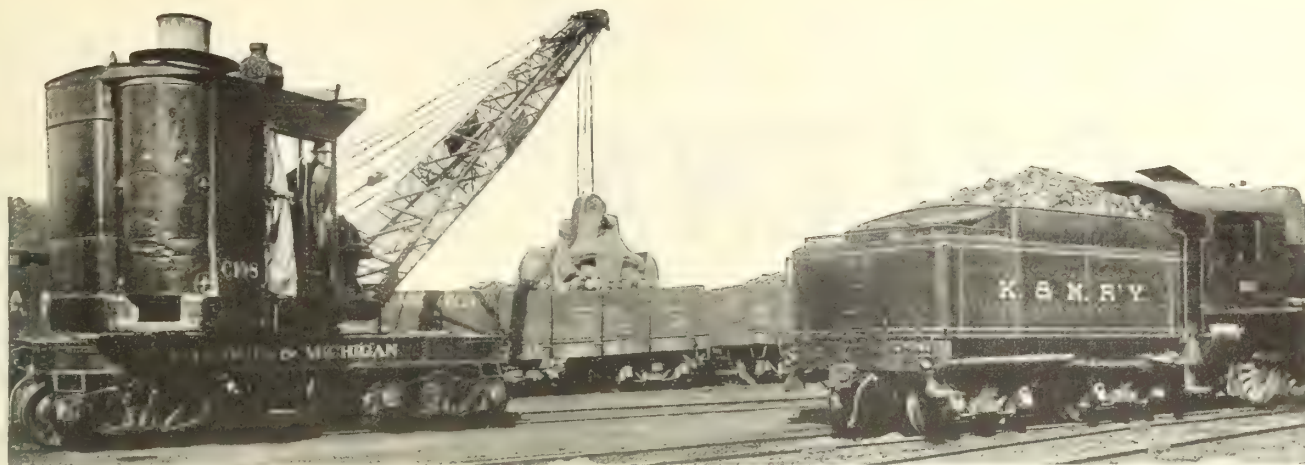
**W. FULTON**

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When you are depending upon a locomotive crane for handling your coal you realize that it must be a **good** crane. You cannot have the crane continually breaking down, as it means a big loss in time.

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are being used to-day by railroad men because they realize that these cranes will do their work as it should be done. One road uses thirty of them. These cranes are built for hard, continuous service. And records prove that they will stand up under the severe working conditions. Ask the owners—they will tell you what Brownhoist cranes will do.

Write for our Catalog K, which shows how and where the Brownhoist Locomotive Crane is used.

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SOLE MANUFACTURERS OF  
Celebrated Galena Coach, Engine and Car Oils  
*LUBRICATION ON A GUARANTEED BASIS*

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When forgings are required to stand the strain of rough weather, and to prove themselves reliable and dependable, write us for particulars and prices.

We have the facilities for the production of heavy steel forgings of all kinds, including:

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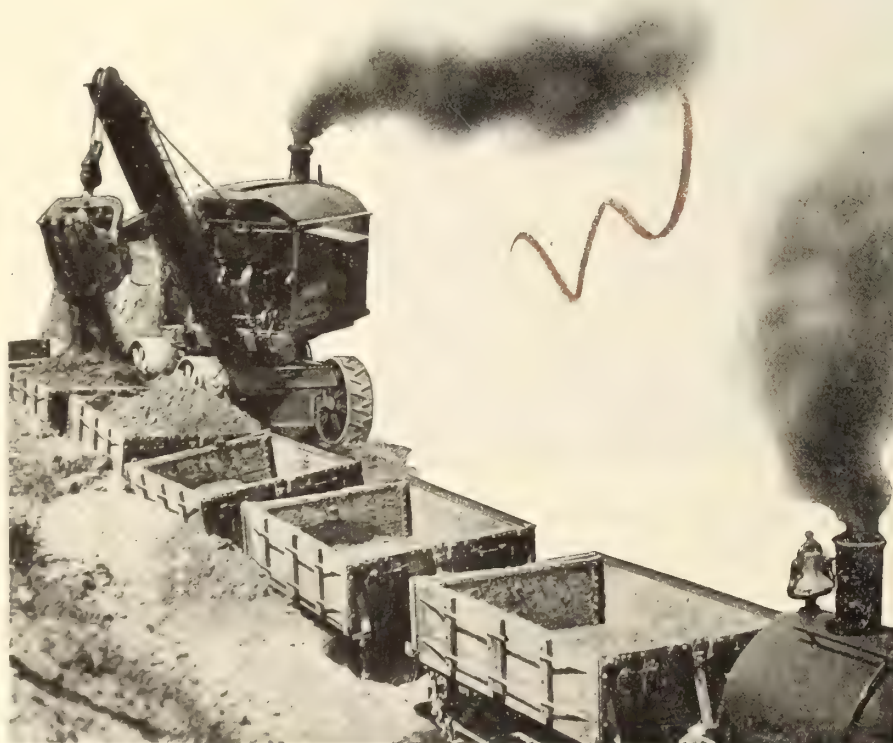
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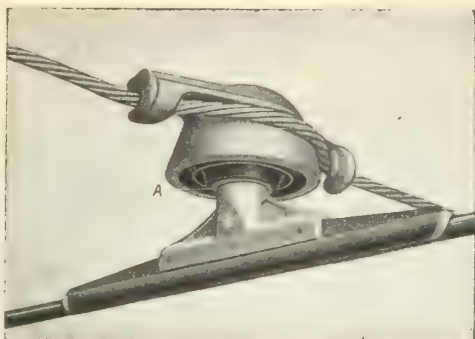
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**The Effect—**

Always a tight joint at "A"  
when installed.

**The Cause—**

O-B Lock Hanger. Note  
spring washer inside shell.

## A Simple Solution

To get a tight joint between trolley hanger and ear at "A" some linemen have put a spring washer around the stud outside the hanger.

This method reduced the number of threads engaging the ear, increased the bending leverage on the stud and necessitated handling loose washers.

## O-B Lock Hanger

Has the same spring washer but inside the shell.

All the advantages but none of the faults of the old method.

PAGES 117-118 OF CATALOG No. 14 GIVE DETAILS.

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Mansfield, Ohio, U.S.A.

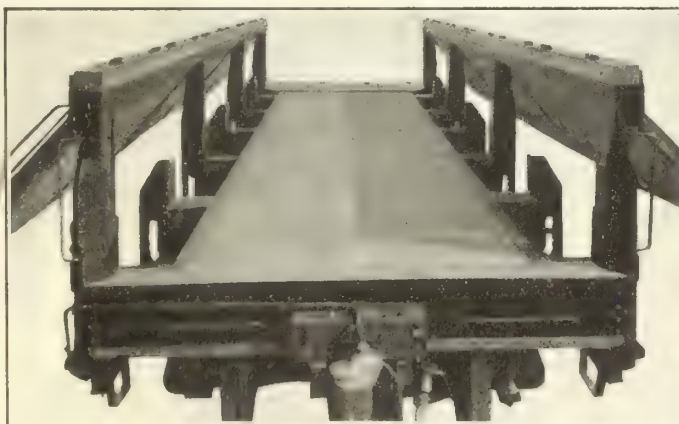
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### THE LATEST IN BALLAST CARS

33 $\frac{1}{8}$ % More Door  
Opening Area

Less Stakes to  
Obstruct the  
Dumping Material

No Clogging of the  
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Between the Plow  
and Stakes



The Pockets At Each Side Allow the  
Material to Get Away Relieving the  
Car Side and Stakes of Strain.

ACTUAL SERVICE HAS PROVEN ITS EFFICIENCY  
LET US SHOW YOU THIS CAR

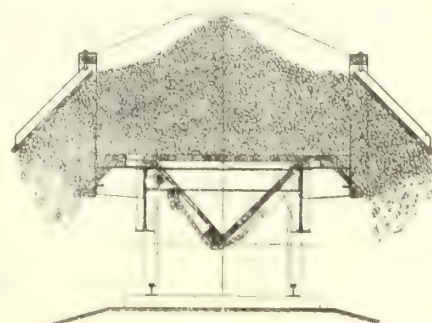
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THE HART-OTIS CAR CO. LIMITED MONTREAL

Dumps Clean and  
Quicker in Any  
Material.

No More Breaking  
of Stakes or Cables

The Car That Will  
Give Maximum  
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Minimum Repairs





## The Science of Water Treatment

The Dearborn Company was organized because of the conviction on part of its founders that a scientific handling of the water treatment question was the only solution for the steam user of the troubles constantly arising as a result of scale formation, foaming, corrosion and pitting of boiler tubes, with all the attendant injury to the boilers, loss of heating efficiency, and waste of fuel.

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The application of scientific knowledge is most important in the choosing of reagents. Provision must be made for the various minerals present in the water, determined by analysis, as well as for the by-products that will be formed as a result of reactions brought about. Failure to give this phase due consideration may result in more serious trouble than the first condition of the water produced.

Unscientific "dope" compounds, ineffective and often harmful, have caused steam users endless annoyance and trouble.

We'd like an opportunity to demonstrate results by our methods. Gallon samples of the water supplies for analysis constitute the first step. May we have them?

**Dearborn Chemical Company of Canada, Limited**

Office and Works,  
1220-1230 Dundas Street, TORONTO, ONT.

MODERN HIGH-CLASS

# ROLLING STOCK



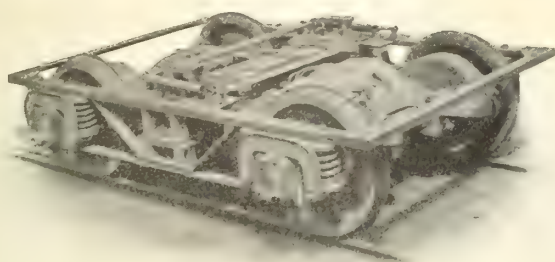
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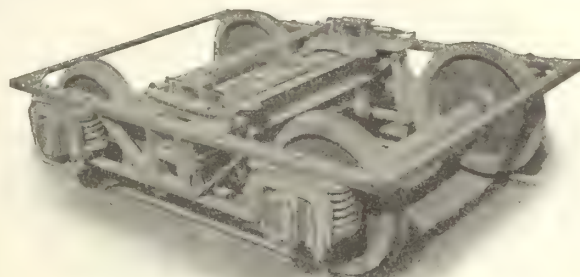
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## The "National" Truck for Interurban Service



WITH MOTORS.



WITHOUT MOTORS.

When we can say that we have never had a dissatisfied customer it means that the "NATIONAL" Truck has unusual merit. It solves the problem of minimum weight with maximum efficiency and smooth riding qualities.

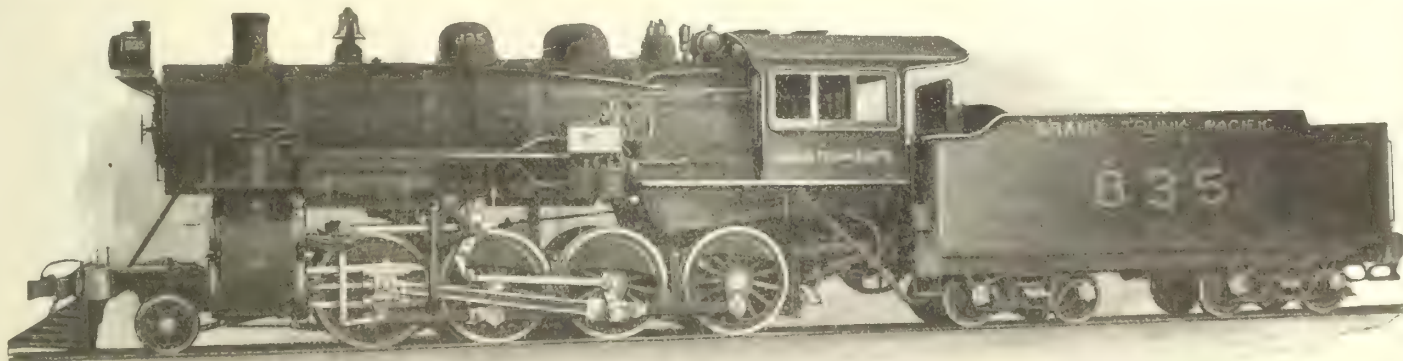
"There are no rough spots on the road that uses the "NATIONAL" Truck.

## National Steel Car Company, Limited

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Works and Operating Offices  
Hamilton, Ontario



Consolidated Type Locomotive Built for Freight Service on the Grand Trunk Pacific Railway.

# LOCOMOTIVES

Long experience, new equipment, efficient management and expert workmen, are guarantees that our Locomotives will give record service. Over 1,200 Locomotives have been built at our Works since the erection of the plant. We are builders of Simple and Compound Locomotives adapted to every variety of service, for Railway Contractors, for Industrial Purposes, Mines, all classes of Railway Work, etc.

We are also builders of stationary boilers, suitable for contractors and industrial plants. Grey iron castings—any size or shape—ordinary or intricate—made promptly. New foundry, splendidly equipped. We would be pleased to quote on castings—singly or by contract. We also make drop forgings of all descriptions.

**CANADIAN LOCOMOTIVE CO., Limited, Kingston, Ontario**





## The No. 25 McLain Pressed Steel Headlight

is equipped with triple nickel-plated polished reflector of special parabolic design which centralizes the rays of a concentrated filament Mazda bulb perfectly focused, throwing a straight, strong beam of light down the track, far ahead of the car.

Extremely light—weighing three pounds less than any other Headlight.

No sacrifice has been made to attain this lightness of weight for the McLAIN No. 25 is as strong as any Headlight made, and has an illuminating power in excess of other Headlights employing an incandescent globe.

Has extended dash—Dust and waterproof.

Guaranteed to give good service.

Write for booklet and prices.

**The Trolley Supply Co.**  
Canton, Ohio

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*Manufacturers of*

MARINE, RAILWAY AND GENERAL ENGINEERING FORGINGS OF ALL SHAPES AND UP TO 40 TONS IN WEIGHT, MADE FROM BEST ORDINARY OR HARMET FLUID COMPRESSED OPEN-HEARTH STEEL. OUR FORGE IS EQUIPPED WITH THE MOST MODERN STEAM HYDRAULIC PRESSES.

*RAILWAY TRACK MATERIAL, fish plate, tie plate, track bolts, spikes, tee rails—12 to 40 lbs. per yard.*

ROLLED STEEL FOR CAR BUILDERS' USE: Spring, machinery, tire, angle, and merchant bar steel, bright compressed shafting, rivets, tank plate—12-gauge up to 1" and 50" wide cold twisted steel bars for reinforced concrete work.

ALSO MINERS AND SHIPPERS OF THE CELEBRATED "OLD SYDNEY" COAL.  
HIGH CALIFORIC VALUE—LOW ASH—UNEXCELLED FOR STEAM-RAISING PURPOSES.  
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NEW GLASGOW, N.S.

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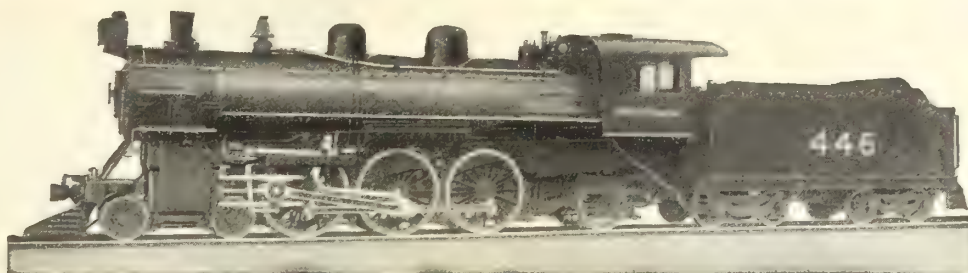
Western Steel Sales Office  
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**NEW GLASGOW, N.S.**



# Heavier Trains—Less Coal and Water Per Trip



PACIFIC TYPE LOCOMOTIVE — INTERCOLONIAL RAILWAY.

Total weight of engine, 243,500 pounds; weight on drivers, 154,000 pounds; diameter of drivers, 73 inches; boiler pressure, 180 pounds; cylinders, 23½ x 28 inches; maximum tractive power, 32,400 pounds.

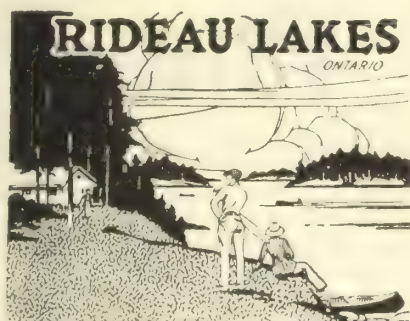
On a 185 mile run at an average speed of 40 miles per hour, these new Pacific type locomotives handle 10 cars and consume 12,884 pounds of coal and 9,750 gallons of water per trip.

Pacific type locomotives built five years ago, handled 9 cars on this same run at the same speed, but consumed 17,620 pounds of coal and 14,250 gallons of water per trip.

This is a saving of 26.9 per cent. in coal and 31.6 per cent. in water, with one extra car.

## MONTREAL LOCOMOTIVE WORKS, LIMITED,

DOMINION EXPRESS BUILDING, MONTREAL, CANADA



## Sportsmen and Vacationists Can Now Easily Reach the Rideau Lakes District

Spend a short or long outing here in this wonderful recreation land of superb bass fishing.

Splendid canoe routes and sites for camping and summer cottages among the many small islands.

GET THESE FREE BOOKS—"Lake St. Joseph Hotel, Quebec"; "Where to Fish and Hunt"; "Muskoka's Lake Shore Line"; "Outdoors in Canada"; "Summer Resorts Along the Road by the Sea."

The Canadian Northern Ry. will take you to Canada's finest recreation spots—Muskoka Lakes, Georgian Bay and Parry Sound, Lake St. John District, Lake Edward, Quebec, and many others.



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Style No. 3200

## THE GARLOCK PACKING CO.

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Locomotive Throttles  
Use Garlock Style Number 3200.

Air Pump Piston Rods  
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These Packings are Guaranteed to give Satisfactory Service under the above conditions.

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Enamelled iron signs are ideal for station name and station door signs.

They are much superior to a painted wooden sign, which has to be repainted at frequent intervals, and they last a lifetime.

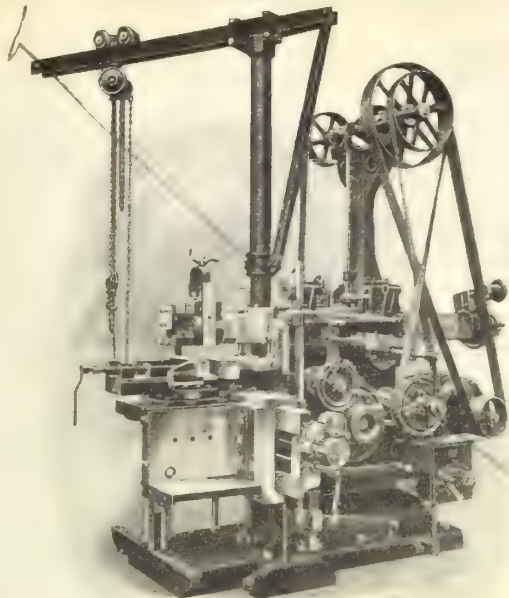
There is absolutely no wear to them, and we guarantee that they will not fade or be affected by the weather in any way.

We will be pleased to quote you prices on request.

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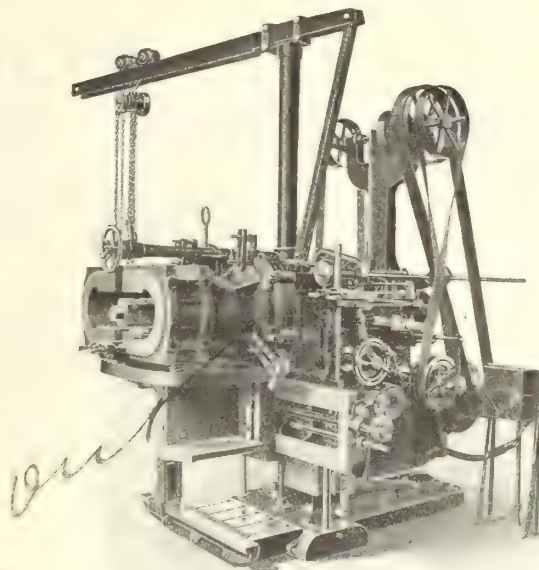




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THE MOST POWERFUL SHAPER OF ITS SIZE BUILT, ENOUGH SO TO BREAK  $1\frac{1}{4}$  x 2-INCH TOOL STEEL.

RIGID IN CONSTRUCTION, AND THE DRAW CUT ELIMINATES VIBRATION AND CHATTER.



**SPECIAL RAILROAD SHAPER, SLOTTING CONTINUOUS AXLE BOXES 22 INCHES THROUGH DIAMETER OF CROWN BRASS  $12\frac{1}{2}$  INCHES.**

THIS MACHINE PLANES THE BRASS WITH THE LINES OF CUT PARALLEL TO THOSE IN THE BOX, MAKING A PERFECT BEARING, AND ELIMINATING TROUBLE WITH LOOSE BRASSES.

**THE MORTON MANUFACTURING CO., Muskegon Heights, Mich., U.S.A.**

Send for Bulletin No. 6 G., which fully illustrates.

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When better files are possible they will still bear these famous names

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For 50 years we've made files only. To-day we make sixty million each year. From raw steel to finished file we supervise every step.

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What you save in time, labor and money more than pays for the extra files.

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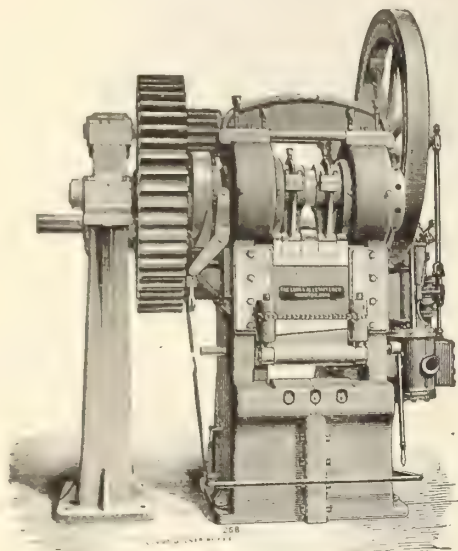
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Gate Shear—Steam-Driven

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## THE LONG & ALLSTATTER CO.

Hamilton, Ohio, U. S. A.

Riveting Machines

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Bending and Forming Machines

Write for Catalogue if interested. Correspondence invited.

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*Let us send you this pamphlet.*

This comprises practically all the shops of importance in North America, and it can be said without exaggeration that the list of railroads using Thermit includes practically every system from the small road having only three or four locomotives to the largest system in the world having many thousand locomotives.

If by any chance your shop is not using Thermit, you should investigate the process and see how effectively and economically it will handle the many repairs on locomotive frames and other sections.

Remember that the greatest railway systems in the world use hundreds of thousands of pounds of Thermit. They do not use it for any reason except that it "delivers the goods" and has proven itself a profitable investment.

Let us mail you our new pamphlet, No. 2144, which contains full information on Thermit in Railroad Shops.

All Thermit materials and appliances are manufactured in the United States and Canada

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## Pintsch Mantle Light

No other system of car lighting gives clean, safe and efficient light without intricate mechanism, subject to defects and failures. Pintsch Mantle Light is the only absolutely dependable method of lighting railway cars.

### The Safety Car Heating and Lighting Company

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718 TRANSPORTATION BUILDING, MONTREAL



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Accommodation 350 Rooms. Rates \$2.00 per day and upwards. European Plan.

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## Excellence in Railway Service

is expressed in what the

### Grand Trunk System

is offering the Travelling Public of Canada.

UNEXCELLED ROAD BED  
SUPERB DINING CAR SERVICE  
COURTEOUS ATTENTION  
MODERN EQUIPMENT

The Grand Trunk System reaches all trade centres in Eastern Canada, and is now a large factor in Western Canada traffic through the Grand Trunk Pacific Railway, recently completed to the Pacific coast.

### The International Limited

Canada's Train of superior service, leaves Montreal at 10.15 a.m. daily, arrives Toronto 5.45 p.m., London 8.53 p.m., Detroit 10.58 p.m., Chicago 8.00 a.m. Observation, Library, Compartment Cars. Modern in every detail. Electric lighted.

W. P. HINTON,  
Assistant Passenger Traffic Manager,  
Montreal, Que.





## Don't Pump Your Jack Down

*Lower the Load by "Pressing the Button"*

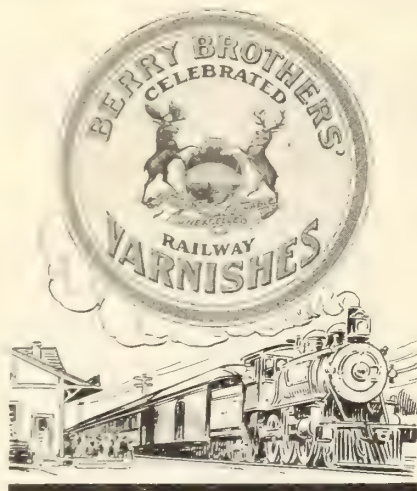
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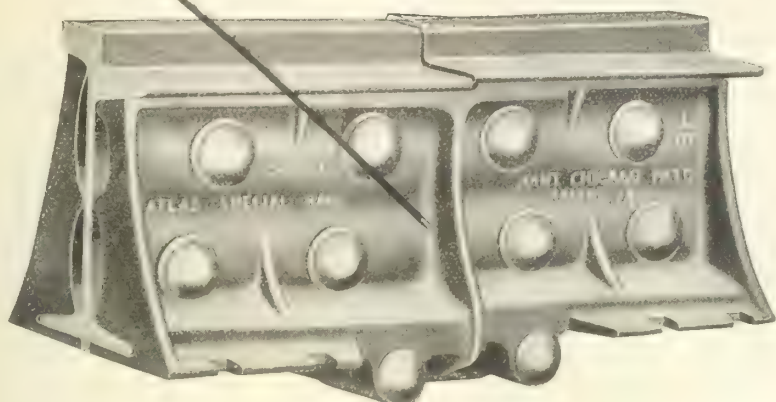
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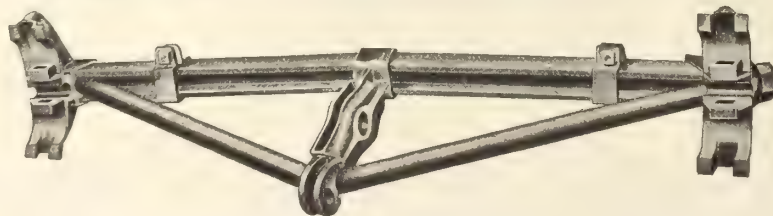
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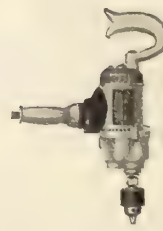
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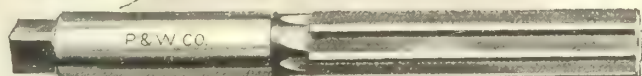
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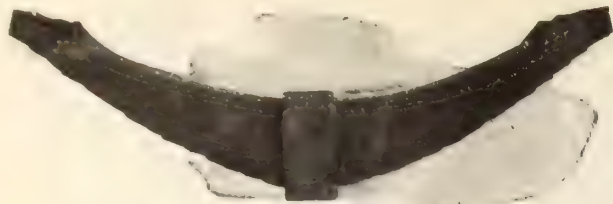
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20 in.	2 $\frac{1}{2}$	$\frac{3}{4}$ , 1, 1 $\frac{1}{4}$ , 1 $\frac{1}{2}$ , 2 in.	7.50	2.50	$\frac{3}{4}$ , 1, 1 $\frac{1}{4}$ in. 1.00
25 in.	3 $\frac{3}{4}$	1 $\frac{1}{2}$ , 2, 2 $\frac{1}{2}$ , 3 in.	7.50	3.00	1 $\frac{1}{2}$ , 2, 2 $\frac{1}{2}$ , 3 in. 1.25

Prices on larger sizes furnished upon application.

DESIGNED ESPECIALLY to handle pipes spaced closely as in coil work. No. 2 $\frac{1}{2}$  wrench illustrated requires but three-quarter inch space between pipes.

POSITIVE GRIP instantly taken. Operates without lost motion in stroke of handle. Can be locked or released easily in any position on the pipe.

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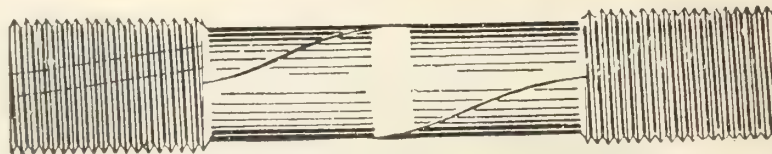
CAN'T CHEW. The Parmelee will make or break the tightest joints without injuring pipe or threads, as it has no teeth. The only wrench suitable for galvanized pipe.

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# Canadian Railway and Marine World

August, 1915.

## Single Track Automatic Signals, Toronto, Hamilton and Buffalo Railway.

During the summer of 1911 the T.H. & B.R. began its first automatic block signal installation on 9 miles of track, from Kinross to Vinemount, Ont. In 1913 the automatic signaling was extended from Vinemount eastward to Welland, 26 miles, and in 1914 signals were installed on the west end from Hamilton to Brantford 25 miles. There remains approximately 16 miles of single track between Hamilton and Brantford which is not equipped with automatic block signals.

As shown in the accompanying map, fig. 1, the T.H. & B.R. forms a connection between the Canadian Pacific on the north and the New York Central Lines on the south. The track and signal arrangement of the Hamilton terminals, also the profile and alignment, are shown in fig. 2. Traffic is heavy, the average being 32 trains a day,

sidings into adjoining blocks, as signals 4, 5, 12 and 13, figs. 3 and 4, are in all cases absolute, and when in the stop position must not be passed, as the block may be occupied by an opposing train. Signals governing trains approaching the siding, as signals 3, 6, 11 and 14, figs. 3 and 4, are permissive, and when in the stop position may be passed after a stop has been made in accordance with the rules. Intermediate signals, as signals 7, 8, 9 and 10, figs. 3 and 4, also are permissive. Ordinarily there are two or three pairs of intermediate signals between passing sidings, but in some cases there is only one pair, in which case the intermediate signals are staggered so as to provide an adequate margin of safety if a train should disregard an absolute stop indication and enter a block occupied by an opposing train. In fig. 4 train 2 has

and serve as a reminder that a meet is to be made at this point.

In fig. 9 train 1 is about to meet trains 2 and 4 at siding B. Train 1 enters the siding and proceeds into the next block under authority of a clear indication at signal 11. Signal 10 goes to clear as soon as train 1 enters the siding and switch is restored to normal position, and train 2 proceeds toward siding C.

Fig. 10 shows the trains proceeding in their respective directions. When train 2 passes signal 8, signal 10 goes to caution and train 4 can advance on this indication.

Intermediate switches are, in most cases, equipped with push-button indicators of the semaphore type, and normally indicate block is not clear. Before opening the main line switch trainmen are required by rule to press the push button; if conditions are

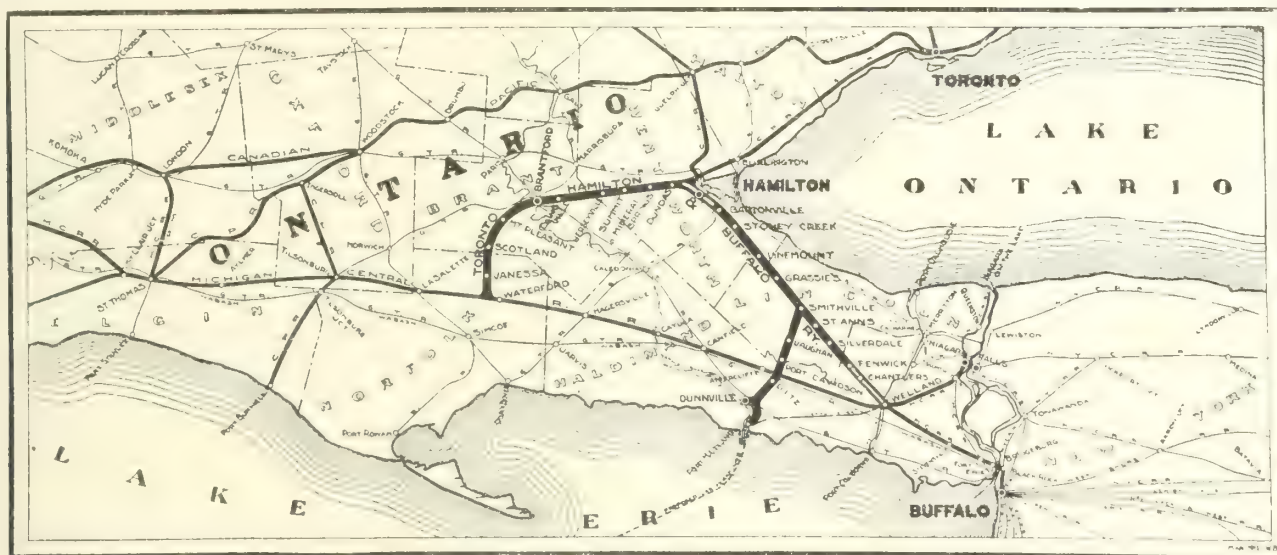


Fig. 1. Toronto, Hamilton and Buffalo Railway Lines.

and the maximum 52 trains a day, as follows:

Freight, westward .. Aver. 6 Maximum 10  
Passenger, westward Aver. 10 Maximum 16  
Freight, eastward .. Aver. 6 Maximum 10  
Passenger, eastward Aver. 10 Maximum 16

Formerly trains were operated by the telegraph block or time interval system in connection with train order boards, and in some cases by standard semaphore train order signals. Trains following a passenger train were held at train order stations until passenger train was clear of the block, and a time interval of five minutes was maintained at train order stations between following freight trains. Train orders and instructions regarding train movements are transmitted by telephone, and there is a telephone at each passing siding so that trainmen can communicate direct with the dispatcher when occasion requires.

The system of signalling is the General Railway Signal Co.'s absolute permissive block system, in which the block for opposing trains is from siding to siding, and for following trains the block is from signal to signal as in double track signaling. Signals governing movements from passing

entered the block between sidings A and B, and is protected against opposing train 1 by absolute signal 5, which is in the stop position.

Fig. 5 shows the minimum spacing of following trains running under caution signals, and fig. 6 the minimum spacing of following trains running under clear signals. In both cases absolute signal 5 protects against opposing trains. There is also a caution indication for each stop indication.

Fig. 7 shows opposing trains 1 and 2 approaching meeting point at siding B, and illustrates one of the important features of the absolute permissive block system—the double distant or caution indication, signals 7 and 9, and signals 12 and 14, which affords maximum safety at meeting points, and insures proper signal indications. Owing to the arrangement of the control circuits it would be practically impossible for train 1 to pass signal 7 at clear and then find signal 9 at stop, or for train 2 to pass signal 14 at clear and then find signal 12 at stop. Absolute signals 10 and 11 protect against opposing trains.

Fig. 8 shows trains 1 and 2 at siding B. Permissive signals 9 and 12 are at stop

such that it would be safe to enter the main track, the indicator blade operates to the vertical position and indicates block is clear. If the block is not clear, the indicator blade remains in the normal position. This arrangement of de-energized switch indicators reduces to a minimum the chance of false clear indications. The push button operates two contacts, which make and break both sides of the energizing circuit. The resistance of indicators is 690 ohms.

Main line switches are equipped with model 5 switch circuit controllers through which, in some cases, the control circuits are broken, and in other cases the track circuits are shunted.

**Track Circuits.**—The length of track circuits varies considerably, according to the distance between successive signals; the average length is approximately 2,000 ft. and the maximum length about 4,000 ft. Ballast is rock and gravel, affording good drainage; ties are untreated oak and cedar; rail is A.S.C.E. 80 lb. and 100 lb.; all rail joints, including insulated joints, are of the continuous type; two 44 in. E.R.B. bond wires connect adjoining rails at each joint.

The track battery consists of two cells of



Columbia 600 ampere-hour, high internal resistance type, housed in 8 ft. cast iron battery cases. Track relays have a resistance of 4 ohms; front contacts are platinum to graphite, and back contacts platinum to platinum. These relays are housed in a cast iron relay box, which is mounted on the signal mast or on a cable post, depending upon the particular location. Wire used for track circuit connections is no. 9 B. & S. gauge, rubber covered. All connections may be identified by means of fiber tags on which appear the proper letters and figures.

the characters shown in the circuit plans.

The Signals conform to Railway Signal Association specifications; signal mechanisms are G.R.S. model 2 A top of mast type, operating in 3 positions in the upper right hand quadrant, and are equipped with 10 volt direct current motors. Absolute signals are distinguished by a square end red blade and by a red marker light below and in the same vertical plane as the active light. Permissive signals are distinguished by a pointed end red blade and by a red marker light below and to the left of the active light. Roundels are R.S.A. standard;

by means of a derrick, which was also used in setting the concrete battery wells. R. L. Latham, Chief Engineer, T.H. & B.R., had general charge of the installation, which was performed under the immediate supervision of A. A. Hurst, Supervisor of Signals. A. C. Holden was engineer in charge for General Railway Signal Co.

**Instruction of Trainmen.**—Rules governing use of the automatic signals were adopted by the railway officers, and were printed in the back part of the time table with the operating rules. About the time the signals were ready for service, the rail-

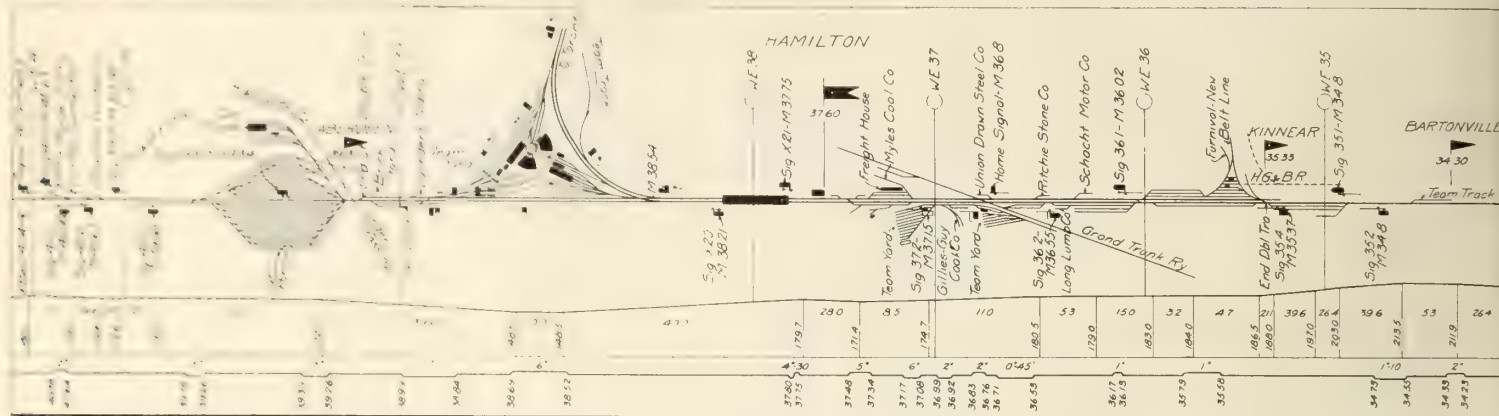


Fig. 2. Diagram showing Signals, Track, Profile and Alignment at Hamilton Terminals, T. H. & B. R.

**Line Circuits.**—The signal control wires are no. 9 B. & S. gauge, weatherproof, copper clad, and are supported on a separate cross arm below the telegraph line, which was practically reconstructed before the signal wires were strung. Wires extending from line to function are no. 14 rubber covered, and are formed into a cable, held together with marline, and supported by messenger wire. Line circuits are operated under the polarized line control system, which requires one less line wire than a similar neutral control system. Ordinarily there are 3 line wires extending from

the colors are red for stop, yellow for caution, and green for clear. The automatic signals are numbered according to their respective mile post locations; odd numbers are assigned to signals governing west bound trains, and even numbers to signals governing east bound trains. The figures are arranged horizontally on the number plate as shown in the accompanying illustrations. The top and bottom parts of the signal masts and fittings are painted black, and the intermediate part white, making a conspicuous signal, which stands out clearly against the usual backgrounds.

way officers held at the company's headquarters at Hamilton several meetings for instruction of the trainmen concerning the signal aspects and indications, and the rules governing their use. At these meetings the automatic signal system was thoroughly explained and discussed in connection with lantern slides of the signal aspects and indications which were thrown on a screen. A model 2 A signal mounted on a short mast, an indicator, a switch circuit controller and other signaling appliances, which were operated as under service conditions, afforded a practical demon-

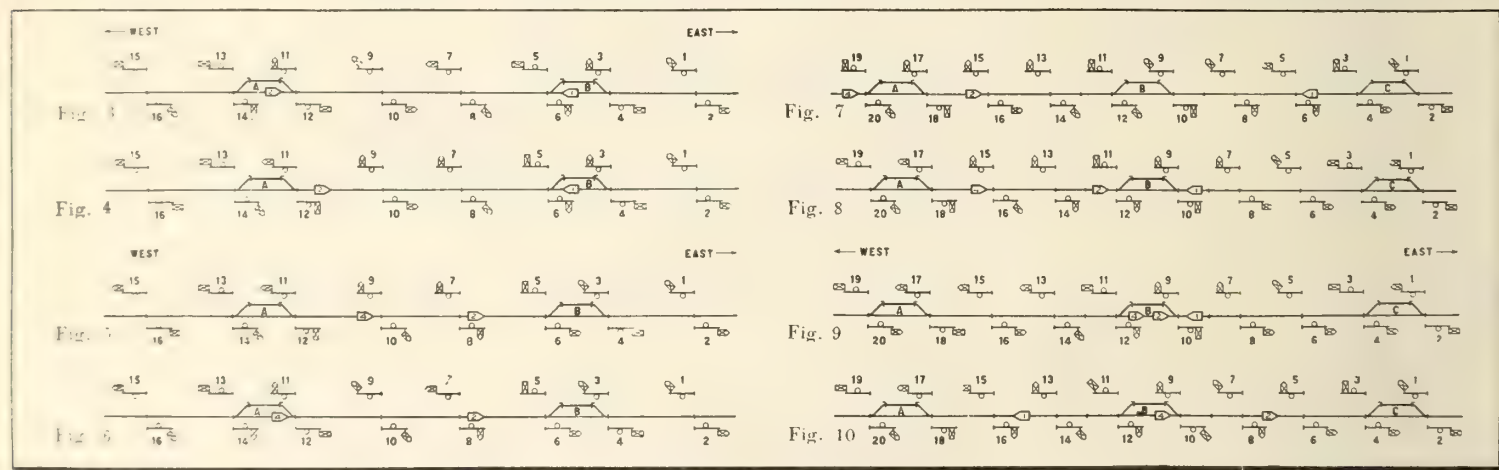


Fig. 3. Trains at Adjacent Sidings. Fig. 4. One Train in Block. Fig. 5. Minimum Spacing under Caution Signals. Fig. 6. Minimum Spacing under Clear Signals. Fig. 7. Trains Approaching Meeting Point. Fig. 8. Trains at Meeting Point following Eastward Train. Fig. 9. Trains Meeting. Fig. 10. Trains Proceeding from Meeting Point.

sidings and 5 line wires extending through sidings. Line and local relays have a resistance of 670 ohms; front contacts are platinum to graphite, and back contacts platinum to platinum. These relays are ordinarily housed in a cast iron relay box mounted on the signal mast. All relays and other mechanisms likely to be affected are protected by G.R.S. model 1 B lightning arresters, to which are attached suitable connections to ground. All connections in the relay boxes are conveniently arranged and attached to R.S.A. terminals, which are properly tagged and marked according to

Semaphore lamps are R.S.A. standard, and are equipped with long-time oil burners. Each signal is operated by 16 cells of Schoenmehl R.S.A. standard potash battery, which is housed in a Potter Winslow no. 36 concrete battery well.

**Installation.**—The railway company furnished and installed in place all insulated joints, insulated switch rods and connections, also all line wire supports. The General Railway Signal Co. manufactured and installed in place all signals and signal appliances. Most of the material was delivered by work train. Signals were erected

stratum of the signal system and fixed firmly in the minds of employees the essential features of the system. The practice of instructing trainmen concerning rules and other matters pertaining to their duties is a subject of the greatest importance, and not only increases the general efficiency of employees, but reduces to a minimum the chance of accident.

**Maintenance** is in charge of a signal supervisor, whose force consists of 2 maintainers, 4 battery men and 2 lampmen, who make a daily inspection of the signals and appliances on their respective districts.



Each man is provided with a velocipede car on which he carries the maintenance supplies and a kit of tools. Any improper operations of the signal system are reported by the maintainer by joint wire to the Chief Engineer, Superintendent and Signal Supervisor. Copies of report are forwarded by train mail to Signal Supervisor and Chief Engineer, with full explanations of cause. The Signal Supervisor investigates each case personally and works up a record which shows the performance of the entire signal system for a given period. The Sig-

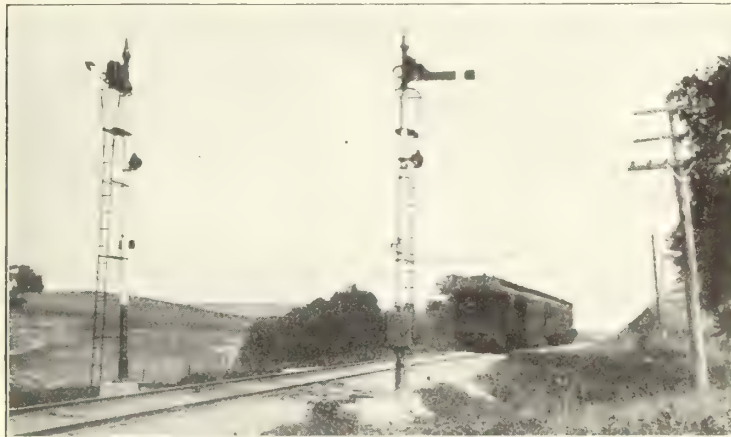
nal line, as one train can follow another as soon as the first train passes the first signal in advance, which is accomplished in considerably less time than the prescribed time interval of the telegraph block. 4. The signals afford maximum protection at meeting and passing points, serving as a check on dispatchers' orders, also as a reminder to trainmen at scheduled meeting and passing points. 5. The signals more than double the safety factor in connection with flagging, as an approaching train would, in most cases, meet a caution or

## Reclamation of Hose Couplings.

By E. J. McVeigh, General Storekeeper, Grand Trunk Railway.

We are all interested as never before in the reclamation question, and while the ground has been pretty well covered lately, there is always room for something more, if it is to the point, and there is one small item that I would like to call attention to.

I presume every road on this continent has a hospital track on which stands locomotives waiting repairs. Some of these machines will never go through the shop,



Absolute-Permissive Block System, Toronto, Hamilton and Buffalo Railway.

nal Supervisor also keeps a record of all labor and material chargeable to signal maintenance, so that maintenance costs can be determined for the entire system or any part thereof. The cost of maintenance per mile per month is about \$16. Ordinary maintenance supplies are carried in stock at the general storehouse at Hamilton, and a few emergency supplies are kept on hand at maintainers' headquarters.

**What the Signals are Accomplishing.**—The officers of the T.H. & B.R. state that they are well satisfied with the results

stop indication before the flagman could go out far enough to insure adequate protection. 6. Owing to the high degree of protection which the automatic signals afford, "19" orders may be used in many cases where "31" orders would otherwise be used. These features and others combine to accomplish the desired end—safe and economical operation.

"Gasol," a semi-natural gas, is being introduced as a substitute for acetylene and hydrogen for autogenous welding. It is ob-

and many of them will not be taken in for a considerable time.

I have for years been particularly interested in the care of steam heat hose and couplings, and a few days ago, while walking along the hospital track at a certain railway shop, I counted the number of steam heat and air hose that were still attached to a line of disabled locomotives. Counting them all as good useable parts, there was in that line \$80 worth of material that was rapidly going to waste.

Now, no matter what the condition of these parts when the locomotives go into the shop, they are removed, and may or may not be properly reclaimed. But one thing we can be sure of that they will not be re-applied to that locomotive when it comes out.

Supposing that all of these hose and couplings were in good order when the locomotives were placed on a repair siding, as they would very likely be. If they had been removed at that time, and it would only take a few minutes to do this, they could have been at once put into service and the purchase of new ones saved. But granting that the rubber was of an age that would make it advisable to remove it, you still have the couplings and nipples to put into service, and if these are left on the locomotive, a fair proportion of them will be so damaged that they can never be put in use again.

What I have said here about locomotives applies also to a greater or less extent to cars, and while this may be comparatively a small thing, I consider it is worth while, and if there are any who have not given this attention, I would suggest that they take the first opportunity of examining their hospital tracks to see what they find. If we cannot save \$100 every day, that is no good reason why we should not make the effort to save \$10.—Railway Storekeeper.

The elimination of dense black smoke by locomotives requires the supplying of sufficient air to the fire, the thorough mixing of the air and combustible gases and the maintenance in the firebox of a temperature that will cause the combustible gases and oxygen of the air to unite.



Absolute-Permissive Block System, Toronto, Hamilton and Buffalo Railway.

obtained by the automatic signals, which may be briefly summarized as follows: 1. Under proper observance of the indications, the signals provide for opposing as well as following movements, a definite space interval which practically eliminates the liability of collisions. 2. Misplaced switches, broken rails, or any breaks in the continuity of the track cause the display of a stop indication at the signal governing entrance to the block, and thus greatly reduces the liability of derailments. 3. The signals increase the traffic capacity of the

tained from the waste gas from oil wells, and is said to cost only 0.1 ct. per cu. ft., a material reduction on the other gases.

What is said to be a record in loading rails was accomplished recently by the Lehigh Valley Rd., when 171,988 ft. of 90-lb. relaying rail was loaded from alongside the main line in a day by the use of a locomotive crane and ditching machine. This amount of work equals over 2,300 tons, or over 16 track miles.

Interlocked milling cutters are said to give better results than plain cutters.



# Railway Mechanical Methods and Devices.

## Tool in Intercolonial Railway Shops.

Fig. 1. General Foreman Blacksmith, Frog and Switch Shop.

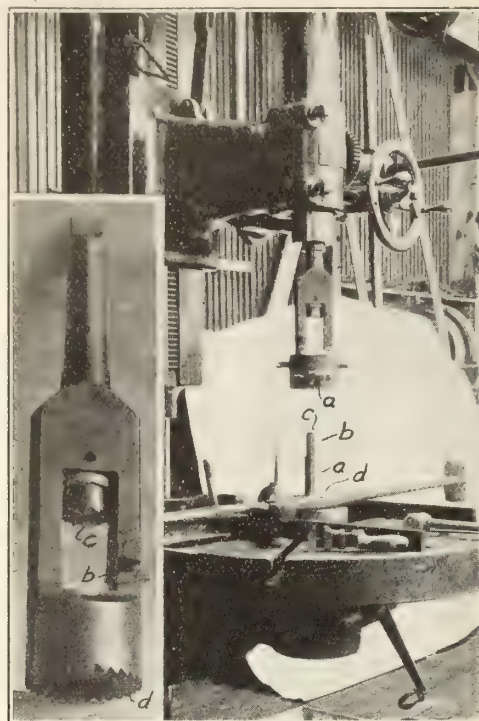
The accompanying illustration shows a tool used in a drill press, to turn and mill the cast steel journals of the walking beams of hand cars, in the Intercolonial Ry. frog and switch shop, Moncton, N.B. The cutter at a turns off the journal of the walking beam at a. Cutter b, shown in the inset, turns off the journal at b. Milling cutter c in the inset mills off the end of journal at c to make it the right length. In the inset the ring that holds the cutter a has been removed to show the milling cutter d, which faces off the beam at the shoulder of journal at d. This is all done at one operation. The beam is then turned over, and the journals first machined are placed in a jig, which fits the centre hole of the drill press, thereby properly aligning. The journals on this side are then machined in the same manner as described. This tool has proved a very efficient one.

## Making High Speed Twist Drills in Michigan Central Railroad Shops.

The high speed twist drills used in the M. C. R.'s shops at St. Thomas, Ont., are made in the shop tool room there. The equipment for making the drills is shown in the accompanying illustration, which also shows a drill blank, twisted drill blank and a completed drill.

The base casting a, which is shown tilted back on a side, is bored out through the top to receive the shell b, which is bored out with a wall about  $\frac{1}{4}$  in. thick. A number of sleeves of an inside diameter slightly greater than that of the finished drill are

the shell b grips the upper end of the blank. A wrench applied to the upper end is given  $1\frac{1}{2}$  turns, causing the drill blank to twist the required amount, the inner sleeve c guiding the blank while twisting, so that it is perfectly concentric when removed after

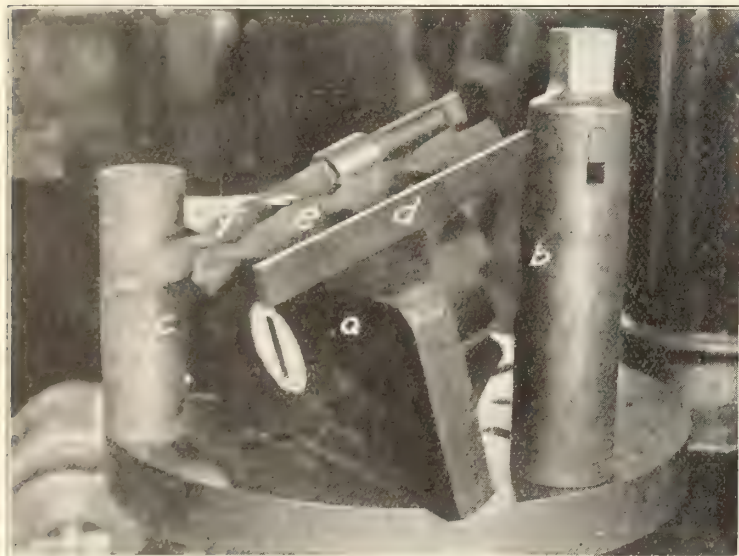


Tool for Finishing Hand Car Walking Beam Journals in the Drill.

## Making Superheater Tube Nesting Clips in Stratford Shops, G. T. R.

The sets of four superheater tubes in each of the superheater flues of a locomotive are held together both front and rear by three piece nesting clips, assuming the form shown to the right in fig. 1. The lower member of the three pieces is of heavier sheet stock than the other two, as it supports the weight of the tubes on the two bottom flanges, which in the superheater flue bear at two points, centring the four superheater tubes in the flue. The G.T.R. shops at Stratford, Ont., have developed an interesting process of making these clip components, and drilling and assembling them on the tubes.

All three clips are made in an air operated bulldozer, the stationary and movable elements of which are shown in fig. 2. This view also shows the dies in the act of forming the top or straddling part of the clip, the part before and after forming being shown at a and b. To the stop rest c, there is secured a channel casting 'd, between the walls of which there are pivotted two bell crank arms, normally kept open by springs f. At the outer ends of the arms e, there are sheet metal clips, which when the arms are wide open, are just of the correct width to take in the pressing blank a, centring it in line with the male element of the punch, g, which is attached to the ram of the machine. The short inner arms of the bell cranks e, when swung in as far as they go, just meet. The punch g, as it travels forward carries in the centre of the blank until the latter strikes the inner arms of the bell cranks e, when the outer arms of the latter commence to fold in, pressing the blank around the formed die g, the in-



Tools for Making High Speed Steel Twist Drills.

made to slip into the shell. One of these sleeves is shown at c. The upper end of the shell b is squared, to take a wrench.

The operation is shown by following blank d through the process of twisting. It is first of all heated to the correct working heat for high speed steel. Then it is slipped into the central hole of the base casting a, fitting into the slot in the base, which is shown whitened in the illustration. Over top of it is slipped the shell b, inside of which there is the sleeve c, the inner diameter of which is the same as the width of the drill blank. The cross slot in

the twisting. This leaves the blank as at e.

A special soft steel shank is used for the high speed steel drills made in this manner, and which is shown at f. The upper end of the drill is turned down slightly, fitting up into a hole in the body of the shank. A slot across the lower face of the shank fits over the upper end of the full size of the drill, and transmits the power from the shank to the drill body.

In factory boiler firing it has been shown conclusively that 25% of the coal bill depends on the skill of the fireman.

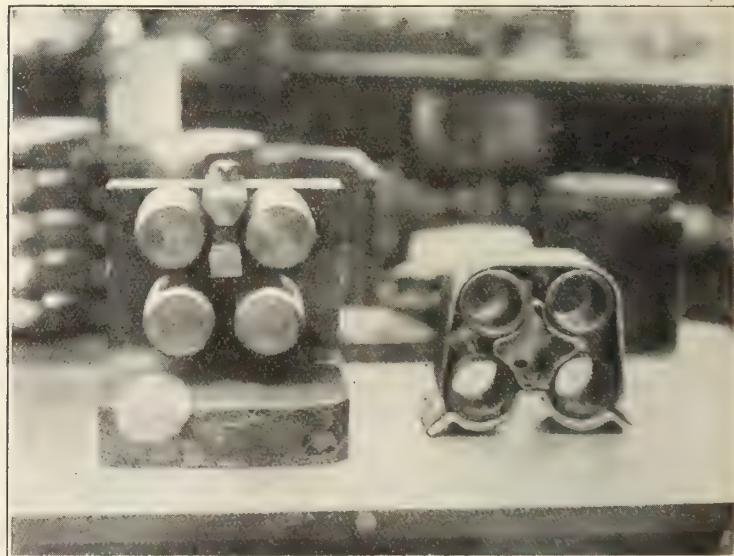


Fig. 1.—Jig for Drilling Superheater Tube Clips, With an Assembled Clip.

ner faces of the arms e corresponding in shape. The part comes out as at b. A row of the finished parts is shown in the right background.

The dies for making the base or lower part of the clip are shown to the left in fig. 3. The female part of the die a, is secured to the stationary head of the bulldozer, and the male part b, to the ram. The blank from which the part is made is the same width as the die part a, against which it is placed, the punch b on its stroke forcing the blank to the shape of the die contour.

The forming of the centre or separating



section of the clip is the most intricate part of the operation, requiring three strokes of the punch, forming the part around a central die of the inner shape of this part. The dies used for this operation are double, parts c and d, on a base e, being stationary on the punch. The movable parts f and g are secured to the ram head. The middle

they were drilled from marks. A slight error in laying out would result in either the holes not mating, or else a loose fit. A good tight fit in the completed set is most essential. The parts are secured together with small screws, the several parts being held together during the assembly by a special clamp.

throwing the lathe jig in which they were held to be turned 1-16 in. out of centre in a plane at right angles to the faces of the tools, first in one direction and then in the other. Made in this way, the life of the cutters was quite satisfactory. One of the side cutters is 5-32 in. wider than the other, and referring to the cross-sectional view of

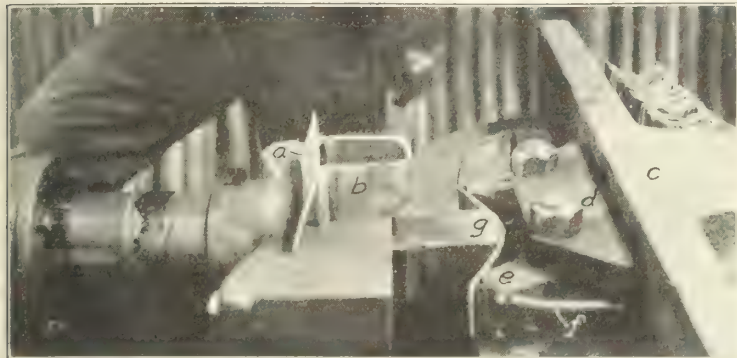


Fig. 2.—Forming Straddle Member of Superheater Tube Clips.

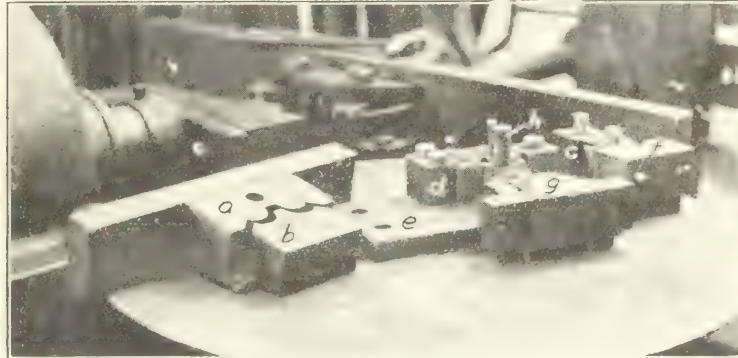


Fig. 3.—Dies for Forming Inner and Bottom Members of Superheater Tube Clips.

fold of the part is formed between dies c and f, which take the blank and form the centre fold and upper two quadrants, leaving the ends of the blank parallel and projecting along the side of die c. The part thus formed is placed around die h, which is of the inside size of the finished member. The faces of dies d and g correspond to that of the partially finished part, which is slipped in place around the centre die h as shown. The right half of die d is not secured to the base e, but is located on it by guide pins, which permit of its motion within short bounds in line with the path of the ram. Behind this part, there is a hinged block, about 1/2 in. thick. Similarly, at right angles to it in die g, there is another hinged block set into the die under the spring clip shown. This hinged block is swung up for the first operation, the near arm of the blank being folded down along the side of die h. Lowering the hinge in g and raising that in d for the second pass,

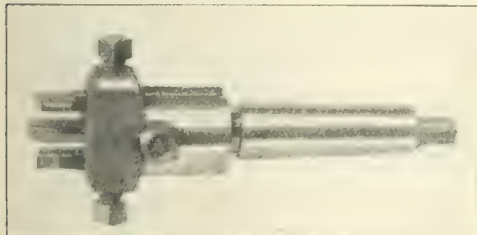


Fig. 1.—Special Boring Tool for Removing Staybolts.

causes the other arm of the blank to be folded down over the first one, completing the forming operation.

The several holes in the three parts are then drilled in the jig on the left in fig. 1, the four pins in which represent the four superheater tubes. The inner member of the clip is lipped in between the four pins, and the two holes drilled through the drill holes in the upper central pin, the lower central pin taking the drill thrust. The central holes of the lower part of the clip are drilled by placing the part on the upper round pins, with the centre under the central drill block. The end holes in both the bottom and straddling sections of the clip are drilled by slipping in between the upper and lower round pins on either side, with the end bearing on the lower squared pin, holding the part against one of the round pins to locate. This jig was first made to overcome the trouble experienced early with the drilling of these clips when

### Staybolt Boring Tool.

The tool described in this article was designed by the writer to rapidly bore out old staybolts from locomotive boilers. The need for a tool of this kind was due to the fact that we were replacing the old-style bolts by the improved flexible type with which most locomotive shop men are familiar. The boring tool is driven by an air motor and the size of the holes bored

the boiler plates, fig. 2, it will be seen that the smaller cutter works 1-16 in. in advance of its fellow. The purpose of this is to overcome the tendency of the chips to crowd at the point of the tool and fracture it. This boring tool gave very satisfactory results, producing clean-cut holes of exactly the required size; and its cutting capacity may be judged from the fact that chips up to 38 ins. long were produced.—W. Hall, Fort William, Ont., in Machinery, N. Y.

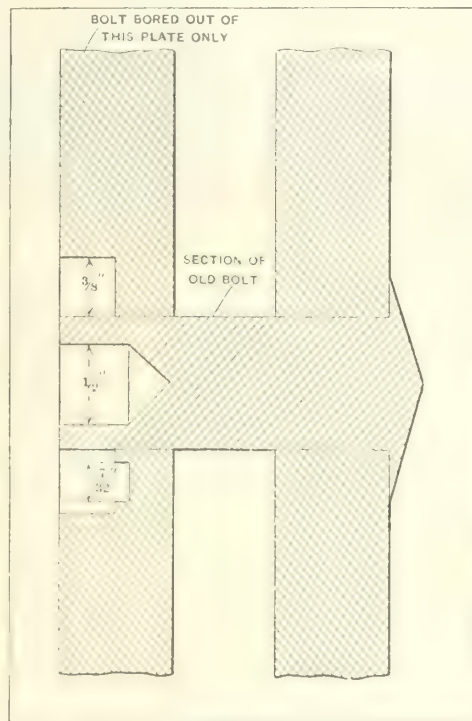


Fig. 2.—Section Through Boiler Plates, Showing Section Removed by Each Cutter.

is 1 5/8 in. diam. Men who have had experience boring out staybolts with a twist drill used in connection with a ratchet and "old man," will readily understand the value of a tool of the form illustrated. An attempt was made to bore the holes with an ordinary twist drill driven by an air motor, but the result was unsatisfactory.

The cutters were made of Novo steel, which was annealed to provide for turning them to the required size, after which they were alternately backed off on the inside and outside to afford the required clearance. This backing off was performed by

### Machinery Protection in the Grand Trunk Railway Shops at London.

The safety first policy on the G. T. R. has been extended very rapidly throughout the system, all conditions that tend towards unsafe practices being investigated from time to time, and remedies applied as required to eliminate or reduce the risks. In no place has the campaign been more successful than in the shops, as the conditions that there exist are naturally more amenable to improvement than on the road, as the conditions to be contended with are more or less constant factors.



Saw Guard with Adjustable Hood.

A number of the machines in the G. T. R. car shops, at London, Ont., have been studied and safeguards for each separate condition recommended. These are ingenious for the most part for their simplicity, requiring no complications that are liable to reduce the effectiveness of the device by making it easier to perform the operation without the guard than with it. The saw guard shown herewith is of the simple type in use on most of the machines. It will be noticed at a glance that while the device should prove most effective, it offers no inconveniences to the operator that are at all commensurate with its value as a guard.



It will be observed that it consists of a hood, shaped to fit over the saw, and made of three pieces of sheet iron rivetted together. It is supported at the back on a hinged connection from the table, in line with the saw, the support being a thin member, lighter in thickness than the saw, and fits in the saw cut in the board, so that the board does not interfere. It can be adjusted by a thumb screw for any thickness of wood to be cut.

### Ballast Trimmer for Intercolonial Railway.

The work of the ballast trimmer is to follow the ballast train, or in other words, as the ballast train is at work along the line it leaves the ballast in heaps and this has to be trimmed down to the standard, which is from the top of the tie to bottom of slope 18 ins., and from bottom of slope to centre of track 8 ft., making the standard for the main line 16 ft. overall. This is where the trimmer is of advantage and with one cut it will leave the slope with the exact contour of the standard road ballast template, which has a radius of 6 ft. 10¼ ins., and also bring the ballast up to within 1 in. of the top of the sleeper. The ballast trimmer can either be pushed or hauled by a locomotive, as it is fitted with two

## A Permanent Railway Track Maintenance Force.

The employment of a permanent force for track maintenance work is an exceptional feature of the Long Island Railroad's maintenance of way department. In the early part of 1913, when there was a great demand for labor, contractors and others whose work was pressing in the summer were paying \$2 per 8-hr. day. The railway was paying only \$1.50 per 10-hr. day, and consequently got labor mainly of inferior quality. Many of the men obtained proved incompetent, and such good men as were obtained would not stay. To meet this condition, the railway established a permanent track force system in May, 1913. The sections average 5½ miles of main track and 4¼ miles of sidings, with an average force of five men (including subforemen). The sections are divided into five classes, the first class covering important terminals and yards and being allowed eight men. In each successive class the number is reduced by one man, the fifth class having only four men. Under this plan the force averages 15% less than under the old system. Rates were increased to 17½c. an hour for laborers and 18c. for subforemen (allowed on about 70% of the sections), while a material increase was made in the wages of the foremen.

Before putting the plan into effect, the

emergency cases, and in such cases it must be promptly oiled by the section gangs, which are provided with oil and hand sprinklers for this purpose.

Throughout the three summer months, while traffic is heavy, work on the main track is practically suspended. During this period all necessary repairs are made on side tracks (including tie renewals), the right of way is mowed for the first time (the state law making it compulsory to mow twice a year, between June 20 and July 10, and during the latter part of August), the necessary frog, switch and guard rail renewals are made, and switch timbers installed. The period from Sept. 1 to about Oct. 15 is devoted to the improvement of the line and surface of main track, cleaning ditches, trimming ballast and preparing for the annual inspection, which takes place about the middle of October.

Immediately after the track inspection, the renewal of ties in main track is taken up and prosecuted vigorously until stopped by unfavorable weather. The renewal of ties in the autumn is a necessity to avoid heavy work in the spring. Experience has proved that where there is a sufficient quantity of clean ballast and the subsoil is of a nature that does not readily retain moisture, this work can be done safely in



Fig 1. Ballast Trimmer with Knives Fastened up and Ready to go out on Line.



Fig. 2. Ballast Trimmer with Knives Dropped down but not in working position as the trimmer was in the yard.

knives that will cut each way at the rate of 7 miles an hour.

The ballast trimmer illustrated herewith, which has been built at the I.R.C. shops at Moncton, can be operated by two men without any trouble, as the only time the knives have to be raised is when coming to railway crossings, etc., and the knives are hung so that when raised they will always swing in towards the car, and just as soon as they are lowered they cut right out to their proper place.

The ballast trimmer is applied to an old 20 ton flat car, which is obsolete as far as main line service is concerned, but is very easily fitted up with two uprights braced with a vertical shaft secured at top and bottom for the knife to work on and to raise and lower same. The knife can be raised and lowered by means of a chain from a pulley on uprights with shaft, pawl, pawl weight and brake wheel, which works on the same principle as applying the brake on a car.

After the first trial trip it was discovered that we would have to have additional weight on the knife when in operation, as it would not stay down in place when it struck a heavy cut of ballast. This was done by riveting two pieces of angle iron with a filler between and held in place with two brackets, one fastened on intermediate sill and other fastened on side sill, and a double coil spring placed on top of angle irons which takes a pressure of 1,000 lbs. to compress spring 1 in. This is worked by a lever on top of car deck and is applied when knife is in operation.

foremen were fully instructed as to what was expected of them. They were to weed out gradually the inferior men and replace them with good men, giving preference to married men and those experienced in track work. The foremen were instructed to make each man understand that he would be given permanent employment if his work was satisfactory, and in case of dismissal by the foreman he would have the right to appeal to the supervisor. The foremen were made to understand that they would be held strictly accountable for the quality of their men, and must show no favoritism, this latter being a marked tendency among the Italians, who constitute the majority of the force. Further, it was impressed upon each foreman that he was being given great advantages and that the railway would demand the best results from him.

The Long Island Rd. has an extremely heavy traffic during June, July and August, averaging about 150,000 passengers daily. The greater part of the line has cinder ballast, with some fine gravel and sand, and only a small amount of stone. For the comfort of the passengers in hot, dry weather, the ballast is coated annually with heavy oil.

As early as practicable in the spring, the force on each section completes the main track tie renewal work left over from the previous year, and then levels up any rough spots. This work must be completed by June 10, at which time the main track roadbed is oiled. After the oiling the roadbed must not be disturbed except in

the fall, if care is taken to see that the ties are properly put in and securely tamped.

As soon as the ground freezes up, and throughout the winter, the time of the section gang is devoted to cleaning culvert and drain openings, repairing right of way fences, renewal of frogs, switches and guard rails, and such minor parts of switches as may be necessary; repairs and renewals of crossing plank and track signs; track gauging, placing tie plates, and distributing ties for spring renewals, practically in the order named. In addition to this, there are the usual snow and ice troubles, together with many incidental jobs that can be taken care of during the winter. It is aimed to have the work advanced so far when the weather moderates that spring work will not be delayed beyond the allotted time, always keeping in mind the limited force. Bolts are tightened, out of face, at the same time the track is surfaced in the spring and fall. Practically all relaying and new track construction is done by extra gangs.

As a result of this system, with the assurance of permanent employment at fair wages, the force has now 95% of the men who were employed at the time of the reorganization. At the inspection last autumn the track was found to be in far better condition than ever before. The conclusion is that the retention of men in service for long periods results in the acquirement of such experience and skill as to promote efficiency, and that there is a consequent reduction in expense. Such men may be classed as skilled labor rather than common labor. At each track inspection the com-



pany gives first and second prizes to the division supervisors, and also to the section foremen on each division. This is well repaid by the quality and quantity of the work done, and the friendly rivalry throughout the entire force, from the laborers upward.

The men are mainly Italians, as noted above, some of whom cannot read or write, while others can read and write Italian only. As these men form the source from which future foremen must be drawn, the railway company has established a free correspondence course in English and simple arithmetic, furnishing pamphlets printed in both languages. After some proficiency

has been obtained, the lessons cover track work, the safety first subject, and suggestions as to good citizenship, naturalization, etc. For the most illiterate, it is proposed to organize a class that can be assembled for personal instruction one or two nights a week, until the men are competent to take up the regular course. This educational system has been taken up eagerly by the men, and induces them to stay with the railway rather than go where no such advantages are offered.

The foregoing is based on information from Coleman King, Supervisor, Long Island Rd.

## Orders by Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed our paper have a continuous record of the Board's proceedings. No other paper has done this.

The dates given of orders, immediately following the numbers, are those on which the orders were drawn.

23678. May 12.—Authorizing Toronto Civic Ry. and G.T.R. to operate over crossing on Danforth Ave., Toronto, the former without first stopping cars, signals to be set normally clear for T.C.R. and at stop for G.T.R.; half interlocking plant be operated by G.T.R. train crew when operating cars on siding, as required by order 21422, Feb. 26, 1914.

23679. May 14.—Relieving C.P.R. from providing further protection at crossing of Metcalfe Road (Bank St.), mileage 1.26 from Ottawa, at junction of Gloucester and Gore Tps., Ont., speed of trains limited to 10 miles an hour.

23680. May 15.—Amending order 5228, Aug. 27, 1908, re Saskatchewan Government highway crossing of C.P.R. near Qu'Appelle Station.

23681. May 14.—Dismissing Steel Co. of Canada's complaint against switching rates charged by Toronto, Hamilton & Buffalo Ry. at its Hamilton Terminals, under Tariff C.R.C. 858, as amended by Supplement 4, effective May 5, 1913.

23682. May 14.—Authorizing Canadian Northern Ry. to open for traffic its North Battleford northwesterly line from Edam to Turtleford, Sask., mileage 38 to 57, speed of trains limited to 15 miles an hour.

23683. May 12.—Approving C.P.R. plans X-5-71 and X-5-72 showing arrangement of navigation lights on swing bridge over Lachine Canal, Farnham Subdivision, Que.

23684. May 14.—Authorizing G.T. Pacific Branch Lines Co. pending further order, to remove regular agent at Griffin station, Sask., caretaker to be appointed.

23685. May 14.—Authorizing C.N. Alberta Ry. to build across Government road allowance between n.w. 1-4 Sec. 18-54-4, and n.e. 1-4 Sec. 13-54-5, w. 5 m., Darwall, Alta.

23686. May 15.—Rescinding order 23482, Apr. 6, upon coming into effect of Canadian Northern Ry. service between Hawkesbury and Ottawa.

23687. May 14.—Ordering G.T. Pacific Ry. to replace apparatus required for safe operation of interlocking plant at crossing of Canadian Northern Ry. by spur to Union Stock Yards, St. Boniface, Man., so that same shall conform with plan approved by Board's engineer under order 16930.

23688, 23689. May 4.—Ordering Great North Western Telegraph Co. to raise its wires at crossings of London & Port Stanley Ry. at Bridge St. and at Lot 3, Con. 7, of Yarmouth Tp., Ont.; work to be done at expense of L. & P.S.R.

23690. May 17.—Ordering C.P.R. to build transfer track to connect with Canadian Northern Ry. at Trenton, Ont.; to be installed within 30 days from date, cost of work and maintenance to be paid by C.P.R.

23691, 23692. May 14.—Approving Bell Telephone Co.'s agreements with Lennox Telephone Co., Apr. 26, and Mount Albert Telephone Co., Ltd., Apr. 29.

23693. May 14.—Authorizing C.N. Alberta Ry. to extend siding across road in s.e. 1-4 Sec. 32-54-1, w. 5 m.

23694. May 15.—Extending to Aug. 1 time within which G.T.R. shall complete highway in Tay Tp., Ont., as required by order 22344, Aug. 5, 1914.

23695. May 17.—Authorizing G.T.R. to take certain additional lands in Callander, Ont., to widen Main St., and rescinding order 22990, Dec. 16, 1914.

23696. May 17.—Relieving C.P.R. from speed limitation of 15 miles an hour over its line between Shebo, mileage 12.2, and Leduc, mileage 66.8, Sask.

23697. May 17.—Rescinding order 23227, Feb. 1, re stopping of G.T.R. train No. 1 at Kerwood, Ont.

23698. May 17.—Authorizing Toronto, Hamilton & Buffalo Ry. to build spur for Bird & Son, Hamilton Ont.

23699. May 17.—Authorizing Edmonton, Dunvegan & British Columbia Ry. to build across certain highways between mileage 305 and 331.77, Alberta.

23700, 23701. May 12.—Relieving Midland Ry. of Manitoba (G.N.R.) and C.P.R. from maintaining night signalman at Elm Creek and Plum Coulee, Man.

23702. May 12.—Relieving Brandon, Saskatchewan & Hudson Bay Ry. (G.N.R.) and C.P.R. from maintaining night signalman near Carroll, Man.

23703. May 12.—Relieving Midland Ry. of Manitoba (G.N.R.) and C.P.R. from maintaining night signalman at Morden, Man.

23704. May 12.—Relieving Brandon, Saskatchewan & Hudson Bay Ry. (G.N.R.) and C.P.R. from maintaining night signalman at Boissevain, Man.

23705. May 18.—Authorizing Toronto, Hamilton & Buffalo Ry. and G.T.R. to build spur for Dominion Sheet Metal Co., Hamilton, Ont.

23706. May 17.—Authorizing London Railway Commission to move north derailed on London & Port Stanley Ry. main line at St. Thomas, 200 ft. from Michigan Central Rd. north track.

23707. May 18.—Authorizing G.T.R. to build siding and spurs for Hamilton Bridge Works Co., Hamilton, Ont.

23708.—May 20.—Suspending, until further order, the following tariffs: C.P.R., C.R.C. No. E-2999; G.T.R., C.R.C. No. E-3157; G.T.R., C.R.C. No. P-115; C.N.R., C.R.C. No. E-641; and O. & N.Y.R., C.R.C. No. 1103.

23709 to 23711. May 19.—Approving Glengarry & Stormont Ry. (C.P.R.) Standard Freight Tariff, C.R.C.; Standard Passenger Tariff, C.R.C. 1, applying rate of 3c a mile; and approving its bylaw re preparing and issuing tariffs of tolls.

23712. May 20.—Authorizing C.P.R. to build branch connecting its lines near Sharbot Lake station, Lot 11, Con. 1, Oso Tp.

23713. May 20.—Authorizing C.P.R. to build extension to siding for Christie, Henderson & Co., in Lot 4, Con. 5, and Lot 4, Con. 6, Nassagaweya Tp., Ont.

23714. May 19.—Ordering C.P.R. to fill in depression near Goodfellow Brothers' property at Tichborne, Ont.; work to be done by June 15.

23715. May 20.—Authorizing C.P.R. to take certain lands for diverting a highway in Bethany, Ont.

23716. May 19.—Authorizing Glengarry & Stormont Ry. (C.P.R.) to open for traffic portion of its line from St. Polycarpe Jct., to Cornwall, Ont., 27.5 miles.

23717. May 19.—Relieving Canadian Northern Ry. from providing further protection at crossing of first public highway west of Rideau Canal, at Smiths Falls, Ont.

23718. May 19.—Amending order 23625, Apr. 29, re operation of C.P.R. Arbog Subdivision, Man., mileage 46.5 to 47.7.

23719. May 19.—Amending order 23496, Apr. 9, re C.P.R. clearances at mileage 68.4, Port McNicoll Subdivision, Ont.

23720. May 19.—Approving G.T.R. clearances, for six months from date at Canada Forge Co.'s sidings, Welland, Ont.

23721. May 19.—Amending order 23569, Apr. 16, re C.P.R. clearance at mileage 100.10, Ottawa Subdivision, Ont.

23722. May 19.—Ordering Edmonton, Dunvegan & British Columbia Ry. to remove its locomotive No. 3 from service until it is put in a proper condition for safe operation, to satisfaction of an inspector of the Board.

23723. May 19.—Ordering Pere Marquette Rd. to raise the station and signal at Kingsville; put in new telegraph signal, at West Lorne, placed higher than present one; raise present signals on buildings at Dutton, Rodney and Blenheim; put in new high signal on

opposite side of track from depot at Ridgetown; new high telegraph signal at Wallaceburg, Ont.; and paint highway crossing signs; work to be completed by July 31.

23724. May 20.—Authorizing Canadian Northern Ry. until further order to build and use level crossing over public road between Cons. B and 2, Westmeath Tp., Ont.

23725, 23726. May 20.—Rescinding orders 21913 and 21931, May 29, 1914, on condition that C.P.R. shall install, within 60 days from date, improved automatic bell at crossing of Hurontario St., Toronto Tp., Ont., 20 per cent. of cost to be paid out of the railway grade crossing fund.

23727. May 22.—Authorizing Lake Erie & Northern Ry. to operate for six months from date over crossing of Toronto, Hamilton & Buffalo Ry. in Brantford, Ont.; crossing to be protected by watchman appointed by T.H. & B.R. and paid by L.E. & N.R.

23728. May 20.—Relieving Campbellford, Lake Ontario and Western Ry. (C.P.R.) pending further order, from installing interlocking plant at crossing of G.T.R. on Pinnacle St., Belleville, Ont.; and authorizing it to continue present protection by semaphores.

23729. May 21.—Approving location of Peace River Tramway and Navigation Co.'s line at Peace River Chutes, for 5 miles along north bank of river, and from Smith Landing to Fort Smith, 15 miles, Alberta.

23730. May 20.—Authorizing Vancouver, Victoria and Eastern Ry. and Nav. Co. (G.N.R.) to join its tracks with Kettle Valley Ry. at Brookmere, B.C.; and to build highway crossing over its tracks for obtaining access to its depot, at Fourth Ave., Brookmere, B.C.

23731. May 21.—Rescinding order 13917, June 10, 1911, re crossing of Montreal Terminal Ry. and C.N. Quebec Ry. by St. Cyr Ave, Montreal East.

23732. May 22.—Rescinding order 22760, Oct. 26, 1914, and ordering that crossing of Kingston Road by C.N. Ontario Ry. and Campbellford, Lake Ontario and Western Ry. (C.P.R.) be protected by day and night watchmen; wages to be paid half by C.N.O.R. and half by C.L.O. & W. Ry.

23733. May 22.—Ordering C.P.R. to build emergency crossing for flood times at bridge 6.3, Teeswater Subdivision, Amaranth Tp., Ont., crossing to have grade of 1 in 20, work to be completed by Oct. 1.

23734. May 20.—Ordering C.P.R., within 60 days, to install bell at crossing of St. Lawrence St., Winchester, Ont.; 20% of cost to be paid out of railway grade crossing fund; cut-out and bonding to be in front of platform, on eastbound track.

23735. May 21.—Relieving C.P.R. from speed limit of 15 miles an hour between Weyburn and Stoughton, Sask.

23736. May 25.—Approving G.T.R. plan, Oct. 7, 1914, showing position of gates installed at Wellington St., London, Ont.

23737. May 25.—Approving revised location Kootenay Central Ry. (C.P.R.), from Lot 3947 to Lot 272, East Kootenay District, B.C., mileage 100.89 to 101.4.

23738. May 25.—Amending order 23657, May 4, re Ottawa and New York Ry. and C.P.R. service at Finch, Ont.

23739. May 25.—Authorizing J. W. Warner, Hinton, Alta., to build irrigation ditch under G.T. Pacific Ry. trestle at Hardisty Creek, Alta.

23740. May 26.—Authorizing C.P.R. to build crossing over its line to station at Okanagan Landing, B.C.

23741. May 21.—Approving plans and specifications of Malahide Tp., Ont., showing work to be done on Teeple Drain where it crosses G.T.R. between Lots 15 and 16.

23742. May 25.—Authorizing G.T.R. to use bridge 10; mileage 8.72, between Cons. 7 and 8, North Dumfries Tp., Ont.

23743. May 26.—Authorizing Vancouver, Victoria and Eastern Ry. and Nav. Co. (G.N.R.) to join its tracks with C.P.R. near Granby Smelter, B.C.

23744. May 26.—Amending order 23505, Apr. 8, re City of Toronto's subway under G.T.R. at Wilton Ave.

23745. May 28.—Authorizing G. M. Macdonnell, Kingston, Ont., to work his mica mine in north half, Lot 8, Con. 14, Storrington Tp., Ont.

23746. May 26.—Approving plans and specifications of Teeple drain, to be built under Michigan Central Rd. on Lot 8, Con. 9, Malahide Tp., Ont.

23747. May 26.—Approving plan and specifications of Malahide Tp., Ont., of Argyle drain, to be built under Michigan Central Rd.

23748. May 27.—Authorizing municipalities of South Crosby and Bastard Tps., Ont., to build highway crossings over C.N. Ontario Ry. and Brockville, Westport and Northwestern Ry., near Brockville Jct.

23749. May 26.—Authorizing G.T.R. to build extension of siding for Canadian Explosives, Ltd., on Lot 4, Con. 1, Chambly West Parish, Que.

23750. May 25.—Ordering Canadian Northern Ry. forthwith to file with Board, plan and profile of its line where it crosses highway between lots 15 and 16, Nerburg Tp., and within



to build highway as

23751. May 1.—Dismissing Winnipeg Sandstone Brick Co.'s application for approval of plan for crossing St. J. Winnipeg, from Canadian Northern Ry. siding to opposite side of

23752. May 18.—Authorizing London Railway Commission to build track on north side Bathurst St. between Wellington and Richmond Sts., London, Ont.; pending further action on part of city and landowners affected, no disposition is made of applications for authority to build tracks on Bathurst St., from Richmond St. west to Thames St., and near Burwell St. east to Adelaide St.

23753. May 27.—Authorizing London Railway Commission to occupy certain G.T.R. land in London, Ont., and to build track and erect poles, along Bathurst St. between present track at Burwell St., to connect with property to be taken at Wellington St.; and dismissing application for order requiring G.T.R. to rearrange its tracks on and adjacent to Bathurst St.; and authorizing the Commission to use Michigan Central Rd. track.

23754. May 28.—Authorizing Hydro Electric Power Commission of Ontario to erect wires C.P.R. on Wellington St. East, Chatham, Ont.

23755. May 29.—Authorizing Campbellford, Lake Ontario and Western Ry. (C.P.R.) and C.N. Ontario Ry. to operate trains over crossings at mileage 1.05 and 0.55 of business spur in Trenton, Ont., without first stopping.

23756. May 29.—Authorizing C.P.R. to use bridges 18.9, Elora Subdivision, and 21.8, Orangeville Subdivision, Ont.

23758. May 28.—Approving agreement between Bell Telephone Co. and Innisfil Telephone Co., May 14.

23759. May 28.—Allowing corrections of omissions, misstatements and errors made in plan, profile and book of reference of Erie & Ontario Ry. (T.H. & B.R.) of its located line from station 726 to 771-58, Dunnville, Ont.

23760. May 29.—Ordering C.P.R. to fence right of way through Tp. 12, r. 9, e. 1 m., Lac du Bonnet Branch, Man., with all dispatch.

23761. May 28.—Authorizing C.P.R. to build spur for Simington Co., Calgary, Alta.

23762. May 28.—Approving plans and specifications of Dunwich Tp., Ont., of drain to be built under Canada Southern Ry. (M.C.R.)

23763. May 29.—Authorizing C.P.R. to use bridge 18.1, Orangeville Subdivision, Ont.

23764. May 27.—Ordering Canadian Northern Ry. to erect fences on each side of its right of way through n.e. ¼ Sec. 15-53-7, w. 3 m. on Shellbrook-Big River Branch; to be completed within 60 days.

23765. May 27.—Ordering Canadian Northern Ry. to appoint agent at Sibbald, Alta., by Sept. 1.

23766. May 28.—Authorizing G.T.R. to build siding for Wood Milling Co., Hamilton, Ont., compensation to be made for any damages. J. P. McLeod, Assessment Commissioner, appointed as sole arbitrator.

23767. May 28.—Authorizing G. T. Pacific Ry. to build Shand Ave., across its line, in Edmonton, Alta.

23768. May 28.—Dismissing City of Edmonton's application for order to carry Stephen (106th) Ave. over Canadian Northern Ry. and Edmonton, Yukon and Pacific Ry. at or near the intersection of 124th St., formerly Edward St.

23769. May 27.—Ordering Canadian Northern Ry. to erect fences on each side of right of way between Canwood and Polworth, Sask., to be completed within 60 days.

23770. May 31.—Authorizing Vancouver, Victoria and Eastern Ry. and Navigation Co. (G.N. Ry.) to open for traffic its line from Coalmont to Brookmere, B.C., mileage 214 to 240.5, to a junction with Kettle Valley Ry.

23771. May 29.—Authorizing Kettle Valley Ry. to open for traffic its line from Coldwater Jct. to Coquihalla Summit, B.C., 14.2 miles; from Otter Creek Summit (Brookmere) to Merritt, to a junction with C.P.R., 29.2 miles; from Midway to Pentiction, 135.2 miles; and from Pentiction to Princeton, mileage 0 to mileage 70.3, to a junction with V.V. and E. Ry. and Nav. Co.'s line; speed of trains from Midway to Pentiction and from Pentiction to Princeton, mileage 84 to 89, and 60 to 70.3, limited to 15 miles an hour.

23772. May 26.—Ordering C.P.R. to build grade farm crossing for W. G. Budd, Rapid City, Man., by July 1.

23773. June 1.—Ordering New York Central Rd. and C.P.R. to stop certain trains at Adirondack Jct. and Highlands, Que.; and rescinding orders 22875 and 22876, Nov. 19, 1914, in that connection.

23774. May 29.—Authorizing C.P.R. to use bridge 3.7, Wingham subdivision, Ont.

23775 to 23777. May 29.—Authorizing C.P.R. to use bridges 13.9, Owen Sound Subdivision; 53.0, over Maitland River, Teeswater Branch; and 27.6, over Saugeen River, Walkerton Subdivision, Ont.

23778. June 1.—Authorizing C.P.R. to build spur and extensions to two spurs for Canadian Explosives, Ltd., St. Jeanne de l'Île Perrot Parish, Que.

23779. May 29.—Authorizing Canadian North-

ern Ry. to build spur for Edmonton Stock Yards, Ltd., in Block A, Edmonton, Alta.

23780. May 26.—Ordering C.P.R. to build farm crossing for O. Guilbert, Pointe du Lac Parish, Que.; applicant to pay \$25 towards cost.

23781. May 28.—Authorizing Windsor, Essex, and Lake Shore Rapid Ry. to refund to C. M. Sinclair, Bridgeburg, Ont., difference of 98c. on shipment of household effects from Kingsville to Bridgeburg.

23782, 23783. May 28, 27.—Ordering Canadian Northern Ry. to erect fences on both sides of its right of way from mileage 47 to 65, west of Tolerton, Alta.; also in n. e. ¼ Sec. 21-55-7, w. 3 m., Sask.; to be completed within 60 days.

23784. May 28.—Ordering G. T. Pacific Ry. to fence both sides of right of way between mileage 967 and 985, west of Winnipeg.

23785. May 31.—Authorizing G.T.R. to build siding for West, Taylor, Bickle & Co., Ltd., Norwich, Ont.

23786. May 26.—Authorizing G.T.R. to build extension of branch for Hamilton Powder Co., Beloeil Parish, Que.

23787. May 31.—Authorizing C.P.R. to build spur for H. de Chires, St. Felix de Valois Parish, Que.

23788. June 1.—Approving Toronto, Hamilton and Buffalo Ry. clearances at Dominion Sheet Metal Co.'s premises, Hamilton, Ont.

23789. June 2.—Approving C.P.R. clearances at Imperial Tobacco Co.'s spur, Calgary, Alta.

23790, 23791. June 2.—Authorizing Canadian Northern Ontario Ry. to remove regular agents at Brooklin and Solina, Ont., caretakers to be appointed.

23792. June 2.—Authorizing Toronto Suburban Ry. and G.T.R. to operate over crossing at Acton, Ont., without first stopping.

23793. June 4.—Authorizing Canadian Northern Ry. to open for traffic its line from mileage 30 to Gravelburg, Sask., until Oct. 30; speed of trains limited to 15 miles an hour.

23794. June 5.—Approving revised location, Edmonton, Dunvegan and British Columbia Ry. through Secs. 1 and 12-62-27, w. 4 m.

23795. June 5.—Ordering C.P.R., within 60 days, to install improved type of automatic bell at crossing of highway at Ketepec station, N.B.; 20 per cent. of cost to be paid out of the railway grade crossing fund.

23796. June 7.—Extending, to July 1, time within which C.P.R. shall install bell at crossing at Martin Station, N.B.

23797. June 7.—Relieving C.P.R. from providing further protection at crossing of highway, mileage 114, Algoma Subdivision, Ont.

23798. June 7.—Rescinding order 22432, Aug. 24, 1914, re C.P.R. spur for E. M. Zentie, Dryden, Ont.

23799. June 7.—Extending, to July 1, time within which C.P.R. shall install bell at main highway between Ketepec and Acamac, N.B.

23800. June 4.—Relieving Erie and Ontario Ry. (T.H. & B.R.) and M.C.R. from maintaining night signalman at crossing near Attercliffe, Ont.

23801. June 7.—Ordering Canadian Northern Ry. to erect, within 30 days a one-pen stock yard at Mitchelon, Sask.

23802 to 23804. June 4, 5.—Authorizing C.N. Ontario Ry. to remove regular agents at Actionite, Camden East, and Ormsby Jct., Ont., caretakers to be appointed.

23805. June 8.—Amending order 23766, May 28, re G.T.R. siding for Wood Milling Co., Hamilton, Ont.

23806. June 8.—Authorizing C.P.R. to build two main line tracks, at grade, across road allowances between mileage 2.01 and 12.28, and one additional track across road allowances between mileages 12.32 and 15.38, Moose Jaw Subdivision, Sask., and rescinding order 19804, July 17, 1913.

23807. June 8.—Authorizing G.T.R. to rebuild bridge on Lot 21, Con. 2, Bosanquet Tp., mileage 136.25, District 15, Stratford Division, Ont.

23808. June 7.—Authorizing C.P.R. to build across Government trail at mileage 59.31 (Red Deer to Rocky Mountain House), in Sec. 14-39-7, w. 5 m., Alta.

23809. June 7.—Authorizing Canadian Northern Ry. to carry traffic over its line between Grand Marais and Birds Hill, Man., 50 miles, until Oct. 30.

23810. June 9.—Dispensing with publication notice of Kettle Valley Ry. application for approval of agreement with Vancouver, Victoria and Eastern Ry. and Nav. Co., and recommending same to Governor in Council for sanction.

23811. June 2.—Dismissing application of City of Vancouver, B.C., for approval of plans of crossing over C.P.R. at Rupert St.

23812. June 1.—Dismissing application of J. W. and Hannah Milsted, Abbotsford, B.C., for order directing Great Northern Ry. to remove obstructions closing road across easterly boundary of Lot 8, subdivision of s.e. ¼ Sec. 22-16, New Westminster District, B.C.

23813. June 2.—Dismissing complaint of Grain Growers' Lumber Co., Vancouver, B.C., that under Note 2 of Sup. no. 45 to C.R.C. no. 1806, C.P.R. exacts higher weight basis on mixed carloads of lumber and shingles to points in western Canada than to points in eastern Canada, under C.R.C. no. W. 1615, and Trans-

continental Tariff C.R.C. 1790.

23814. June 1.—Dismissing application of New Westminster, Burnaby and Coquitlam municipalities for order relieving them from further payment of wages of watchman at North Road crossing between New Westminster, Port Moody and Barnett, referred to in order 11734, Sept. 6, 1910.

23815. June 9.—Authorizing Toronto, Hamilton and Buffalo Ry. and G.T.R. to build extension from spur west of Sherman Ave., Hamilton, Ont., to be completed within three months.

23816. June 9.—Authorizing Lake Erie and Northern Ry. to build, at grade, its ballast pit spur across Given Road, Townsend Tp., Ont.

23817. June 9.—Authorizing C.P.R. to rebuild bridge 3.4 on Drummondville Subdivision, Eastern Division, over Chapman Brook.

23818. June 9.—Relieving C.P.R. and C.N. Ontario Ry. from maintaining night signalman at crossing at Central Ontario Jct., Ont.

23819. June 9.—Approving agreement between Bell Telephone Co. and Tuckersmith Tp., Ont., May 31.

23820. June 9.—Authorizing C.P.R. to use bridge over St. Maurice River, District 3, Eastern Division.

23821. June 9.—Ordering G.T.R., within 60 days to install automatic bell at crossing of Parkdale Ave., Ottawa, Ont., 20% of cost to be paid out of railway grade crossing fund.

23822. June 9.—Authorizing C.N. Ontario Ry. to remove agent at Perth Road station, caretaker to be appointed.

23823. June 15.—Ordering that crossing of Ontario St., Cobourg, Ont., be protected by watchman between 7 a.m. and 8 p.m.; wages to be paid, 1-3 by Campbellford, Lake Ontario and Western Ry. (C.P.R.), and balance by G.T.R.

23824. June 10.—Authorizing G.T.R. to build siding for M. & M. A. Deans, east of Sprucedale station, McMurrich Tp., Ont.

23825, 23826. June 12.—Authorizing C.N. Alberta Ry. to build bridges across Miette River, mileage 237.2, and across Snaring River, mileage 223.

23827. June 11.—Authorizing Bell Telephone Co. to erect telephone line on north side of Elizabeth St., between Queen and Manly Sts., Midland, Ont.

23828. June 12.—Authorizing Lachine, Jacques Cartier and Maisonneuve Ry. (G.T. Ry.) to build across Faber and Everett Sts., Champlain and Papineau Aves., Hughes St., Shaw and Rossland Aves., and Belanger St., Montreal.

23829. June 12.—Relieving C.P.R. and Michigan Central Rd. from maintaining a night signalman at crossing at Appin, Ont.

23830 to 23834. June 14.—Authorizing C.P.R. to use bridges 22.3, near Peterborough station; 21.8, near Botulf station; 3.2, near Elmsley station; 29.0, between Maberley and Ungava station; and 13.4, near Perth station, Ont.

23835. June 14.—Authorizing C.P.R. to rebuild bridge 81.5, Schreiber Subdivision, Ont.

23836. June 14.—Extending, for three months, from July, time within which Canadian Northern Ry. shall complete alterations and additions to its station building at Alsask, Sask.

23837. June 14.—Authorizing C.P.R. to use bridge over highway between Lots 5 and 6, Con. 5, Toronto Tp., Ont.

23838. June 14.—Authorizing Town of Swan River, Man., to build highway crossing over Canadian Northern Ry. at Main St.

23839 to 23842. June 14.—Authorizing C. P. R. to use bridges 33.5, near Cavan station; 4.9, near Norwood station; 0.7, near Havelock station, and 7.1, near Norwood station, Ont.

23843. June 15.—Approving revised location Montreal and Southern Counties Ry. from boundary between St. Cesaire and St. Paul d'Abbotsford Parishes, Que., easterly through ranges of Papineau, St. Joseph and Dwyer, to Lot 177, Range of Dwyer, and authorizing building along Jackson Road, near crossing of C.P.R.

23844. June 15.—Authorizing G.T.R. to operate over extension of siding recently built by Brantford Cordage Co., Brantford, Ont., and approving clearances.

23845. May 1.—Extending, for six months from date, time within which G.T.R. shall complete sidings authorized by order 22818, Oct. 30, 1914, for Ford Motor Co. of Canada, Sandwich East Tp., Ont.

23846, 23847. June 15.—Authorizing C.P.R. to use bridges 19.2, Red Deer Subdivision, and 117.6, Lagan Subdivision, Alta.

23848. June 15.—Authorizing G.T.R. to rebuild bridge carrying Saltford Road, Goderich, Ont., over its line at mileage 162.13.

23849. June 15.—Authorizing Kettle Valley Ry. to build across and divert highway at mileage 69.17, and to cross highway at mileage 70.09, west of Pentiction, B.C.

23850. June 15.—Authorizing C.P.R. to use bridge 18.1, Shuswap Subdivision, B.C.

23851. June 14.—Authorizing Canadian Northern Ry. to build spur for Rosedale Coal and Clay Products Co. in Secs. 29 and 28-28-19, w. 4 m., and to cross north and south road allowance there.

23852. June 14.—Relieving G.T.R. from providing further protection at Toll Gate crossing near Brantford, Ont.



23853. June 15.—Authorizing C.P.R. to use bridge 27.3, McLeod Subdivision, Alta.

23854. June 14.—Approving agreement between Bell Telephone Co. and Otonabee Tp., Ont., June 1.

23855. June 15.—Authorizing C.P.R. to build spur for Kennedy Construction Co., St. Francois de Sales Parish, Que.

23856. June 14.—Authorizing Lachine, Jacques Cartier and Maisonneuve Ry. (G.T.R.) to divert certain lanes in Montreal.

23857. June 14.—Authorizing Quebec Government to build highway crossing over C.N. Quebec Ry. on Lot 17, St. Joseph de Deschambault Parish.

23858. May 27.—Ordering Canadian Northern Ry. to change time card of Elrose Subdivision, Sask., so that train which now leaves Macrorie Jct. for Elrose on Thursday shall leave on Friday, and that train which now leaves Elrose for Macrorie Jct. on Friday shall leave on Saturday.

23859. June 16.—Dismissing application of J. P. Shultz, Dalmeny, Sask., for order directing Canadian Northern Ry. to build siding between Dalmeny and Mannon, Sask.

23860. June 16.—Approving C.P.R. form of special contract, or release of responsibility, in connection with transportation of perishable freight in cold or stormy weather.

23861. June 15.—Approving Moncton and Buctouche Ry. Standard Freight Mileage Tariff, C.R.C. 21.

23862. June 15.—Approving agreement between Bell Telephone Co. and Farrelton Rural Telephone Co., May 28.

23863. June 15.—Relieving Central Vermont Ry. from providing further protection at crossing of highway near St. Armand Station, Que., speed of trains limited to 10 miles an hour.

23864. June 15.—Amending order 23800, dated June 4, re watchman at Erie and Ontario Ry. (T., H. & B. R.) and M.C.R. crossing at Attercliffe, Ont.

23865. June 2.—Ordering Great Northern Ry., within three months, to install improved type of illuminated electric bell at crossing of highway east of White Rock Station, British Columbia Public Works Department to pay cost of installing and maintaining.

23866. June 17.—Approving agreement between Bell Telephone Co. and Moore Tp., June 4.

23867. June 18.—Authorizing Alberta Public Works Department to build and divert highway crossing over Alberta Central Ry. in s.w. ¼ Sec. 15-39-3, w. 5 m.

23868. June 18.—Approving for three months from date, clearances between G.T.R. and telegraph poles carrying wires of G.N.W. Telephone Co. and railway wires between Guy St. and St. Henri Station, Montreal.

23869. June 18.—Authorizing C.P.R. to use interlocking plant installed at swing bridge over Lachine Canal, at mileage 43.1, its Farnham Subdivision, Que.

23870. June 19.—Authorizing C.N. Quebec Ry. to build trestle bridge over Shawinigan River, on revised location at mileage 86.69 from Quebec.

23871. June 18.—Approving specifications and detail plans of C.P.R. standard steel spans, and rescinding order 5658, Nov. 21, 1908.

23872. June 18.—Authorizing C.P.R. to build Heink St., Enchant, Alta., across its Suffield Subdivision, and to build road diversion in s. e. ¼ Sec. 17-14-18, w. 4 m.

23873. June 18.—Authorizing C.P.R. to build siding extension, at grade, across Front St., Grand Falls, N.B.

23874. June 18.—Authorizing C.P.R. to rebuild bridge 2.5 over Jackson River, Drummondville Subdivision, Que.

23875. June 18.—Approving agreement between Bell Telephone Co. and McKillop Tp., Ont., June 8.

23876. June 19.—Authorizing G.T.R. to build siding for Laurin & Leitch, St. Johns, Que., in to Department of Railways and Canals premises.

23877. June 19.—Dismissing application of W. H. Brown, Quebec, Que., for order directing Quebec and Lake St. John Ry. to sell 10 trip tickets from Quebec to St. Catherines station, at 40c each.

23878. June 18.—Authorizing Canadian Northern Ry. to build highway over its track north of Sec. 27-46-23, w. 2 m., Sask.

23879. June 21.—Approving plans and specifications of Dunwich Tp., Ont., showing work in connection with drain to be built under Michigan Central Rd., Pere Marquette Rd.

23880. June 21.—Authorizing G.T.R. to build sidings for Toronto-Hamilton Highway Commission near Oakville, Ont.

23881. June 22.—Ordering Vancouver, Victoria and Eastern Ry. and Navigation Co. (G. N.R.), within 6 months, to submit for Board's approval, detail plans of new location of station and facilities to be built in Vancouver, B.C., work to be completed by June 1, 1917.

23882. June 21.—Authorizing C.P.R. to use bridge 37.5, Havelock Subdivision, Ont., and rescinding order 23839, June 14.

23883. June 21.—Authorizing C.P.R. to terminate agreement under which siding was

built for P. J. Manion and Jas. Murphy, Fort William, Ont.

23884. June 22.—Authorizing C.P.R. to use bridge 28.33 over Little Bow River, mileage 28.57, Lethbridge-Aldersyde Branch, Alta.

23885. June 21.—Ordering that Vancouver, Victoria and Eastern Ry. and Nav. Co.'s line between Ocean Park and White Rock, B.C., be protected, one watchman to patrol track between mileposts 123 and 127, from 7 a.m. to 7 p.m.; one, between mileposts 123 and 125, from 7 p.m. to 7 a.m.; and one between mileposts 125 and 127, from 7 p.m. to 7 a.m., and rescinding order 17959, Nov. 5, 1912.

23886. June 22.—Authorizing City of Vancouver, B.C., to make new grade from north side Keefer St. to south side Cordova St., without prejudice to rights of applicant under order 17840, Oct. 14, 1912.

23887. June 21.—Authorizing British Columbia Public Works Department to build foot bridge over G.T. Pacific Ry. at McBride St., Prince Rupert.

23888. June 22.—Authorizing Dominion Board of Grain Commissioners to lay track to serve Government elevator and docks in Vancouver, B.C.; and rescinding order 23224, Aug. 1, 1914, authorizing city to build highway over C.P.R. at Commercial Drive.

23889. June 21.—Approving location of Lake Erie and Northern Ry. yard and station at Simcoe Tp., Ont., provided end of freight siding be built north of Victoria St., L.E. & N.R. to be at liberty to apply at any time for extension of siding across Victoria St. when business necessities require it.

23890. June 22.—Ordering City of Edmonton, Alta., to raise sidewalk approaching Canadian Northern Ry. on both sides Ottawa Ave., and both sides of tracks, to rail level, and erect railing on each side of sidewalks on north side of tracks; approach of street on north side to be raised to give easy slope towards track; work to be done at City's expense, within one month; within 3 months C.N.R. and G.T. Pacific Ry. to install improved types of automatic bells at crossings of respective railways, 20% of cost to be paid out of railway grade crossing fund.

23891. June 22.—Ordering C.P.R. to erect gates at farm crossing on property of J. F. Huneault, Monte Bello, Que., within 15 days.

23892. June 22.—Approving revised location of C.P.R. Bassano Easterly Branch from Sec. 20-23-29, to Sec. 22-23-28, w. 3 m., mileage 119.43 to 128.95.

23893. June 22.—Authorizing Saskatchewan Board Highway Commissioners to build highway over C.P.R. at Dunelm.

23894. June 22.—Changing conditions respecting shipment of flax seed in bulk, effective Oct. 12, 1914, Supplement 3 to C.P.R. Special Tariff, C.R.C. no. W-1962; Supplement 1 to C.N.R. Tariff C.R.C. no. W-803; and Supplement 1 to G.T. Pacific Ry. Tariff, C.R.C. 30. This order is given in full under Traffic Orders by Board of Railway Commissioners.

23895. June 23.—Extending, for 30 days from date, time within which Canadian Northern Ry. shall install half interlocking plant at crossing of Suburban Rapid Transit Co. on Portage Ave., Winnipeg.

23896. June 24.—Authorizing G.T. Pacific Ry. to remove regular agent at Elie, Man., until further order.

23897. June 22.—Authorizing C.P.R. to build two additional lines overhead on existing bridge across Greene Ave., Que.

23898. June 25.—Ordering G.T.R. to give World Newspaper Co. of Toronto a newspaper service on Flying Post train from Toronto to Hamilton, at \$22 a round trip.

23899. June 24.—Ordering Campbellford, Lake Ontario and Western Ry. (C.P.R.) and G.T.R. forthwith to commence erection of gates at crossings of Cobourg and Grafton Road, to be operated by day and night watchmen; gates to be installed by Aug. 1st, and pending installation day and night watchmen to be appointed at each crossing by July 1, 20% of cost of installing gates at crossing of G.T.R. to be paid out of railway grade crossing fund, cost of installing gates at crossing of C.L.O. and W. R. to be paid by C.L.O. and W. R.; maintenance of gates to be divided equally between the two companies.

23900. June 26.—Approving London and Port Stanley Ry. Standard Passenger Tariff, C.R.C. 1, on basis of 2½¢ a mile, and its Standard Freight Tariff, C.R.C. 1.

23901. June 23.—Approving agreement between Bell Telephone Co. and Hogg & Little, Ltd., June 15.

23902. June 25.—Authorizing C.N. Ontario Ry. to build branch for Marshay Lumber Co., mileage 321.78, Algoma District, Ont.

23903. June 25.—Authorizing G.T.R. to build extension to siding for Provincial Hospital for Insane, Whitby, Ont.

23904. June 25.—Authorizing C.P.R. to build spur for D. E. Adams Coal Co., Winnipeg.

23905. June 25.—Authorizing Kettle Valley Ry. to build bridge over Boston Bar Creek, mileage 16.82, B.C.

23906. June 25.—Amending order 23823, June 15, re crossing of Ontario St., Cobourg, Ont., by Campbellford, Lake Ontario and Western Ry. (C.P.R.) and G.T.R..

23907. June 25.—Ordering St. Thomas Street Ry. to raise its wires at crossing of London and Port Stanley Ry. at Elm St., St. Thomas, Ont., and authorizing L. & P.S.R. to erect its wires there.

23908 to 23911. June 28.—Ordering Michigan Central Rd., St. Thomas Street Ry. and London St. Ry., respectively, to raise their wires at crossings of London and Port Stanley Ry. at Central Ave., Wellington St., and Talbot St., St. Thomas, and Horton St., London, Ont., and authorizing L. & P.S.R. to erect its wires there.

23912. June 25.—Authorizing London & Port Stanley Ry. to erect its wires, temporarily, over G.T.R. at St. Thomas, Ont.

23913. June 25.—Ordering London St. Ry. to raise its wires at crossing of London and Port Stanley Ry. at South St., and authorizing L. & P.S.R. to erect its wires there.

23914. June 28.—Extending to Dec. 1, time for approval of Great North Western Telegraph Co.'s tolls.

23915. June 29.—Authorizing London Railway Commission to open for traffic the London and Port Stanley Ry., 24 miles.

23916. June 28.—Extending to Dec. 1, time for approval of C.P.R. telegraph tolls.

23917. June 26.—Authorizing C.P.R. to use bridge 91.7 over Snake River, Ont.

23918 and 23919. June 28.—Extending to Dec. 1, time for approval of G.T. Pacific Ry. and White Pass and Yukon Route telegraph tolls.

23920 and 23921. June 28.—Approving Bell Telephone Co. agreements with La Compagnie de Telephone de Beauce and The People's Mutual Telephone Co.

23922. June 29.—Ordering G.T.R. to remove northerly diamond crossing of track leading to carpenter shops and storage sheds, from east leg of Y which joins Wabash yard, near Manitoba Street, St. Thomas, Ont.

23923, 23924. June 28.—Ordering C.P.R. to build farm crossings for M. Lacelle and A. Brosseau, Balfour Tp., Ont.

23925. June 30.—Authorizing Lake Erie and Northern Ry. to operate crossing of G.T.R. at station 7+23, Brantford, Ont., for construction purposes only, until Sept. 30.

23926. June 30.—Authorizing London Railway Commission to remove siding on west side to east side of London and Port Stanley Ry. at Talbot St., St. Thomas, and to throw off transfer track with M.C.R. from it. St. Thomas Street Ry. to be properly protected.

23927. July 2.—Suspending certain tariffs for cleaning and disinfecting stock or box cars. This order is given in full under Traffic Orders by the Board of Railway Commissioners.

23928. June 30.—Authorizing G.T.R. to operate siding for W. H. Banfield & Sons, Toronto.

23929. June 29.—Authorizing Ontario Hydro Electric Power Commission to erect wires across Michigan Central Rd. on Edgeware Road, Southwold Tp., Ont.

23930. July 2.—Approving revision at mileage 40.4, C.P.R. Boundary Subdivision, B.C.

23931. July 2.—Authorizing G.T.R. to build siding for A. Dore, Montreal.

23932. July 2.—Approving revised location of G.T. Pacific Branch Lines Co.'s Biggar-Calgary Branch at Loverna, Sask.

23933. July 2.—Authorizing Edmonton, Dunvegan and British Columbia Ry. to build across 25 highways in Alberta.

23934. July 2.—Approving agreement between Bell Telephone Co. and Chinguacousy Tp., Ont., June 21.

23935. June 29.—Ordering C.P.R. to submit plan for approval showing clearances of country grain elevators of not less than 4 ft. 7¼ ins. from gauge side of rail, with grain spout outlet not closer than 3 ft. 7¼ ins. from gauge side of rail, at an elevation of 13 ft. above rail, and grain loading platforms up to 4 ft. 10 ins. high and 3 ft. 7¼ ins. from gauge side of nearest rail.

23936. July 2.—Extending to Aug. 1, 1916, time within which Campbellford, Lake Ontario and Western Ry. (C.P.R.) may use crossing by its ballast pit spur under Canadian Northern Ry. in e. ½ Lot 12, Con. 4, Scarborough Tp., Ont.

23937. July 3.—Approving Edmonton, Dunvegan and British Columbia Ry. location through Tp. 78, R. 21 to 23, w. 5 m., mileage 269.85 to 286.65, Alta.

23938. July 3.—Authorizing City of Fort William, Ont., to build Walsh St. across Canadian Northern Ry.; and dismissing application to open up Isabella St.

23939. July 3.—Authorizing Edmonton, Dunvegan and British Columbia Ry. to build across highway between n.w. ¼ Sec. 30-78-6, and Tp. 78, R. 7, w. 6 m., Alta.

23940. July 2.—Authorizing Canadian Northern Ry. to carry traffic over its line south of Melfort, from Melfort to St. Brieux, Sask., 22 miles; speed of trains limited to 18 miles an hour.

23941. July 2.—Ordering C.P.R., within 30 days, to complete transfer track at Frobisher, Sask., as required by order 22244; G.T. Pacific Ry. to furnish switches; work on G.T.P.R. to be done under supervision of its engineer, and reserving apportionment of cost.



## North Toronto Station, Canadian Pacific Railway.

A short preliminary description of the station which the C.P.R. is building in the north end of Toronto for joint use with the Canadian Northern Ry., appeared in *Canadian Railway and Marine World* for July. For some time work has been progressing on track elevation across the north end of the city, the new station forming a part of the whole general scheme, which involves the raising of the tracks for about 3 miles, with the elimination of all grade crossings. This line has been used by the C.P.R. principally as a freight cut off between Leaside Jct. and West Toronto, from which points the main line runs down to the union station in the lower part of the city. Origin-

work has been started, the excavations and foundations being nearly completed. This station has been designed on a larger scale than would be required for C.P.R. traffic alone, as the Canadian Northern in planning a permanent entrance into Toronto decided on the northerly entrance, arrangements being made with the C.P.R. to build the station, the C.N.R. to use it jointly as tenants. It is the Canadian Northern's intention to use this station for most, if not all, of its Toronto passenger service, but the C.P.R. will retain its connection with the present union station near the waterfront, only using the North Toronto station for certain trains.

by two lower sections containing the station facilities. On the Yonge St. side there will be a 140 ft. clock tower, the 30 ft. spire of which will be of terra cotta. The station building will be 114 x 76 ft., the broader side facing south, with the tracks on the north side passing it at an angle of about 15 degrees. The central or high section of the station will be the main waiting room, 70 x 51 ft., with a centrally located entrance from the driveway on the south side. Flanking this waiting room on the west will be the ticket offices and telegraph offices. Flanking the east side of the waiting room will be the women's room, smoking room, lavatory facilities, and telephone booths. Adjoining the waiting room in the north-east corner will be the news stand and staff lavatory. Directly opposite the main



Fig. 1.—New North Toronto Station for Joint Use of Canadian Pacific and Canadian Northern Railways.

ally the Leaside-West Toronto line was the only entrance into Toronto of the Ontario and Quebec Ry., which was absorbed by the C.P.R. in its early days, and subsequently a connection was built from Leaside Jct. to connect with the union station, and all passenger trains from the east were run over it. For several years a connecting stub line service was operated both ways between Leaside Jct. and West Toronto, and about three years ago the C.P.R. decided to make use of the line from North Toronto to Leaside Jct. for passenger traffic, starting therefrom one of its Toronto-Montreal night trains, and running one of the Montreal-Toronto night trains into it. This proved such a success that a further development of the northern entrance was decided on. The smallness of the existing station made necessary further accommodation, the result of which is the new station on which

A perspective of the new station is shown in fig. 1; a ground floor plan in fig. 2; and the trackage arrangement in the station vicinity, with its relation to the city transportation conveniences, in fig. 3. The station is being built on the east side of Yonge St., at the present end of the Toronto Ry.'s Yonge St. line, which passes down through the centre of the city. With this convenient and through street car line, the new station will be very easily reached from the business centre of the city. The rapid growth of the city northward makes the North Toronto location particularly available for that section of the city, the new location being more centrally located with regard to the centre of population than the present down town union station.

The new station will be a single storey brick and stone structure, the central section of which will have a high roof, flanked

entrance will be the entrance to the midway under the tracks. The vestibule under the tower will lead into the concourse along the north side of the west end of the waiting room, connecting at its east end with the midway. The south and west sides of the station will have a sidewalk, so that passengers may either alight at the main entrance centrally on the south side, or at the tower vestibule, the expectation being that the latter entrance will be used by the majority of passengers who have already secured their tickets, and only require to pass directly to the trains, relieving the main waiting room of much of the congestion that might otherwise occur. Along the west side of the station there will be a 28 ft. driveway, so that vehicles may drive up to either station entrance, and pass through under the tracks through this driveway and out on Yonge St. to the north of the station.



The midway will be a passage 20 ft. wide passing from the rear of the station to the far side of the tracks, under the latter. The elevation of the tracks makes a difference in grade between the track platforms and the station level of  $15\frac{1}{2}$  ft., giving a headway in the midway of about 14 ft. Passing over the midway will be 6 through tracks, the two southerly for eastbound passenger

provided with umbrella roofs, and provision has been made for their future extension to 1,100 ft. These platforms will be reached from the midway by two 6 ft. stairways on the east side. The plans provide for future stairways opposite the present proposed stairways, and another to a platform contemplated for the south side of the tracks.

The baggage room, 137 x 62 ft., will oc-

cupy all the section beneath the tracks between the midway and Yonge St. driveway. From the latter the baggage is to be received through 5 doorways, and will be raised on trucks to the platform level by two  $15 \times 5\frac{1}{2}$  ft. elevators. Provision is made for a future elevator to the contemplated southerly platform. From the south-west corner of the baggage room a spiral

stairway will ascend to the track level, where the station master's office will be located in the tower above the vestibule. Passenger communication with the baggage room will be through the concourse.

The building will be of brick construction, faced with Tyndale stone, while the section under the tracks will be of steel and concrete construction. Around the sidewalk

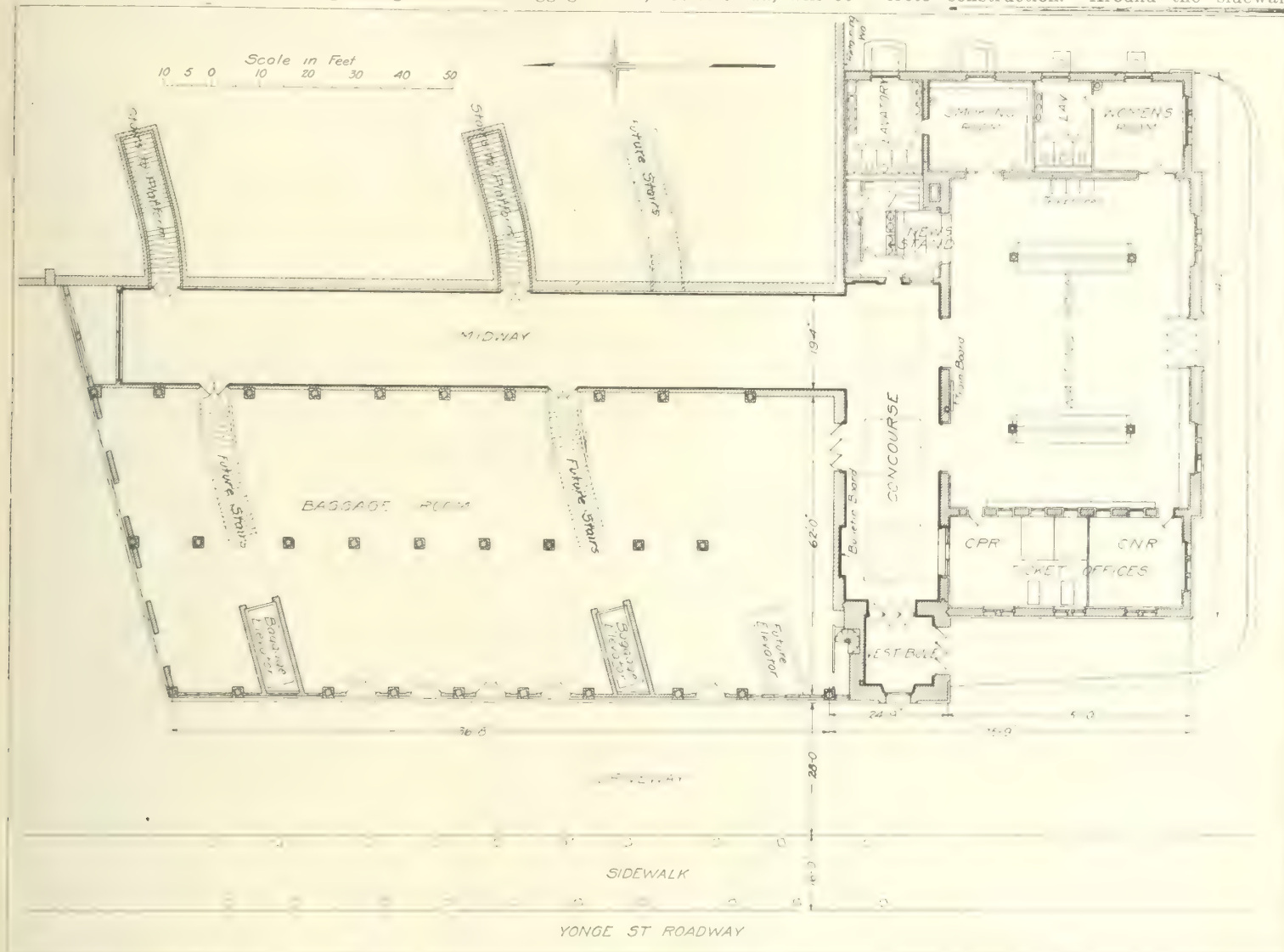


Fig. 2.—Ground Floor Plan of New North Toronto Station.

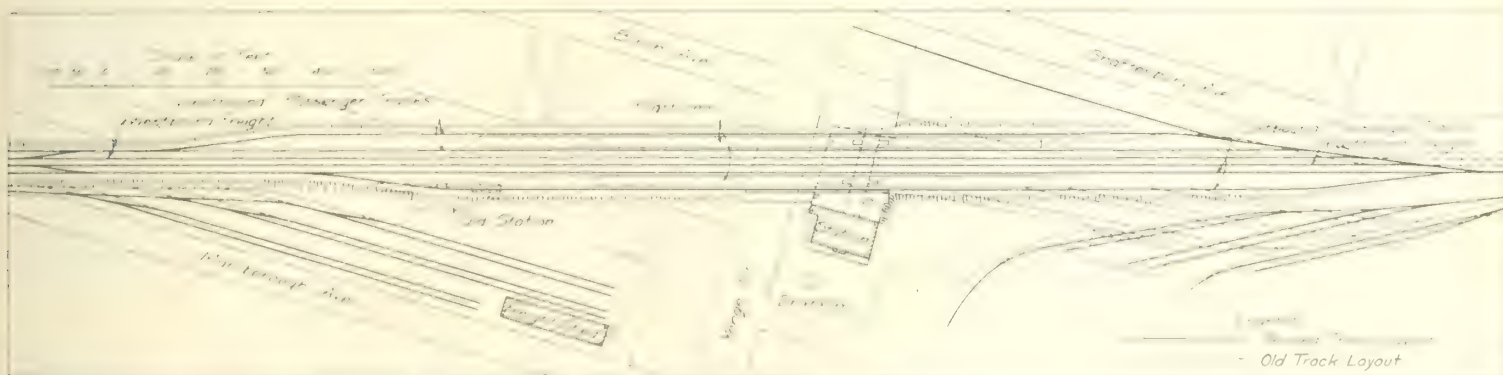


Fig. 3.—Track Arrangement in Vicinity of New North Toronto Station.

service and the two northerly for westbound passenger service, at 31 ft. centre, with an 800 ft. platform 20 ft. wide between each pair. The central pair of tracks, at 13 ft. centres from each other and from the adjoining passenger ones, will be for through freight, the southerly one for eastbound, and the northerly for westbound freight. The passenger platforms will be

occupy all the section beneath the tracks between the midway and Yonge St. driveway. From the latter the baggage is to be received through 5 doorways, and will be raised on trucks to the platform level by two  $15 \times 5\frac{1}{2}$  ft. elevators. Provision is made for a future elevator to the contemplated southerly platform. From the south-west corner of the baggage room a spiral

section there will be a metal canopy. The whole will be of a fireproof construction.

Darling and Pearson, Toronto, prepared the plans, under J. M. R. Fairbairn, Assistant Chief Engineer, and D. H. Mapes, Engineer of Building Construction, C.P.R.

The excavations and the foundations have been done by P. Lyall and Sons, on a percentage basis.



## Birthdays of Transportation Men in August.

Many happy returns of the day to—

V. T. Harrison, ex-Purchasing Agent, Timmanning and Northern Ontario Ry., now of Toronto, born at Ottawa, Aug. 2, 1880.

J. C. Beckwith, Engineer of Construction, Canadian Government Railways, Moncton, N.B., born at Fredericton, N.B., Aug. 1, 1875.

C. B. Brown, A.M. Can. Soc. C.E., Chief Engineer, Canadian Government Railways, Moncton, N.B., born at Ithaca, N.Y., Aug. 27, 1878.

J. S. Carter, District Passenger Agent, C.P.R., Nelson, B.C., born at Aurora, Ill., Aug. 11, 1879.

A. M. C. Fletcher, General Accountant, Canadian Atlantic Ry., Kennebunk, N.S., born near Annapolis Royal, N.S., Aug. 27, 1877.

A. B. Chown, Travelling Passenger Agent, G.T.R., Pittsburg, Pa., born at Belleville, Ont., Aug. 4, 1887.

C. H. N. Connell, Engineer Maintenance of Way, Quebec Grand Division, Canadian Northern Ry., Montreal, born at Woodstock, N.B., Aug. 26, 1876.

E. L. Desjardins, Assistant Superintendent, Montreal and Ste. Flavie District, Intercolonial Ry., Riviere du Loup, Que., born at St. Jean Port Joli, Que., Aug. 1, 1859.

L. C. Fritch, Assistant to President, Canadian Northern Ry., Toronto, born at Springfield, Ill., Aug. 11, 1869.

G. H. Ham, Head Office Department, C.P.R., Montreal, born at Trenton, Ont., Aug. 23, 1847.

A. F. Hawkins, Trainmaster, Moose Jaw Terminals, C.P.R., Moose Jaw, Sask., born in Kent, Eng., Aug. 9, 1884.

W. P. Hinton, Assistant Passenger Traffic Manager, G.T.R. and G.T. Pacific Ry., Montreal, born at Hintonburg, Ont., Aug. 30, 1871.

R. Kerr, ex-Passenger Traffic Manager, C.P.R., born at Toronto, Aug., 1845.

J. D. McDonald, Assistant General Passenger Agent, G.T.R., Chicago, Ill., born at Toronto, Aug. 27, 1855.

T. McHattie, Master Mechanic, Eastern Lines, G.T.R., Montreal, born at Dufftown, Banffshire, Scotland, Aug. 8, 1854.

M. K. McQuarrie, Resident Engineer, District 1, British Columbia Division, C.P.R., Revelstoke, born at Sault Ste. Marie, Ont., Aug. 17, 1884.

J. A. Marsh, Trainmaster, British Columbia Electric R., Vancouver, B.C., born at Dresden, Ont., Aug. 16, 1876.

W. J. Meakin, Locomotive Foreman, C.P.R., Coronation, Alta., born at Toronto, Aug. 22, 1869.

C. Montgomery, Master Mechanic, Pere Marquette Rd., St. Thomas, Ont., born near London, Ont., Aug. 29, 1860.

W. E. Mullins, General Manager, Costa Rica Division, United Fruit Co., San Jose, Costa Rica, born at Stratford, Ont., Aug. 13, 1870.

H. R. Naylor, Division Car Foreman, Eastern Division, C.P.R., Montreal, born at Hull, Eng., Aug. 30, 1885.

F. H. Phippen, K.C., General Counsel, C.N.R., Toronto, born at Belleville, Ont., Aug. 26, 1862.

W. M. Porteous, District Freight Agent, C.P.R., St. Louis, Mo., born at Edinburgh, Scotland, Aug. 3, 1857.

J. F. Richardson, ex-Superintendent Telegraphs, Saskatchewan Division C.P.R., born at Granby, Que., Aug. 23, 1861.

W. G. Ross, chairman, National Harbor Commissioners, born at Montreal, Aug. 6, 1873.

W. Le B. Ross, Local Treasurer, G.T. Pacific Ry., Winnipeg, born at Ottawa, Ont., Aug. 9, 1868.

F. C. Salter, European Traffic Manager, G.T.R., and Canadian Ex. Co., London, Eng., born at Sarnia, Ont., Aug. 31, 1863.

C. R. Scoles, General Manager, Quebec

Oriental Ry., New Carlisle, Que., born at Grantham, Lincoln, Eng., Aug. 27, 1856.

A. O. Seymour, General Tourist Agent, C.P.R., Montreal, born at Ogdensburg, N.Y., Aug. 14, 1887.

J. F. Sweeting, Industrial Agent, Natural Resources Department, C.P.R., Calgary, Alta., born at Worthing, Eng., Aug. 20, 1872.

W. F. Taylor, General Storekeeper, Intercolonial Ry., Moncton, N.B., born at Hillsboro, N.B., Aug. 20, 1855.

F. E. Warren, General Car Foreman, C.P.R., Winnipeg, born at Chelsea, Que., Aug. 29, 1872.

W. B. Way, Superintendent, District 2, National Transcontinental Ry., Cochrane, Ont., born at Bowmanville, Ont., Aug. 22, 1867.

E. H. Williams, Locomotive Foreman, Canadian Northern Ry., Brandon, Man., born at West Toronto, Ont., Aug. 26, 1844.

## Railway Building in Saskatchewan.

The Saskatchewan Railways Department's report, submitted at the Legislature's recent session, shows that there were in the province, on Dec. 31, 1914, 5,980.58 miles of railways, as follows: Canadian Pacific, 2,762.75 miles; Canadian Northern, 2,099.32 miles; Grand Trunk Pacific, 1,118.51 miles. At the end of 1913 the mileage owned by the several companies was: C.P.R., 2,479.34 miles; Canadian Northern, 2,087.63 miles; G.T.P.R., 1,087.56 miles; total, 5,654.53 miles.

The development of the province resulting from the increase in railway mileage from 551.97 at the end of 1905, is shown by the following figures: In 1905 there were in the province 3 cities, 16 towns, 63 villages and 2 rural municipalities, whereas at the end of 1914, there were 7 cities, 72 towns, 296 villages and 297 rural municipalities. In 1905 there were 307 elevators, and the total grain production was 46,612,136 bush., whereas in 1914 there were 1,465 elevators, and the total grain production was 243,513,384 bush.

Notwithstanding the large increase in railway mileage within the period referred to, the report states that there are still extensive districts with considerable population where settlers have to travel from 50 to 60 miles to market. "This is true of a large part of the area between the Weyburn-Lethbridge line and the International Boundary, of a district north of Maple Creek; of a district north of Battleford; and of still another district north and east of Melfort. There are as well many other districts suffering in a less degree. This it is that makes it to be regretted that the capital required to continue the building of branch lines is not at present available."

The Government policy of aiding the construction of branch lines by guaranteeing bonds is governed by the following conditions: 1. Approval of route by the Government. 2. Provision of proper facilities and a sufficient supply of rolling stock. 3. Payment of adequate wages to the men employed upon construction. 4. Construction so far as possible within the province. 5. Sub contractors to be bound by conditions 3 and 4. 6. Provision to be made for protection against forest and prairie fires along the lines under construction.

**Suspicious Character at C.P.R. Angus Shops.**—A man of Austrian nationality with explosives and incriminating documents in his possession, was arrested while measuring some of the buildings at the C.P.R. Angus shops, Montreal, July 19.

## Traffic Orders by the Board of Railway Commissioners.

### Leakage in Flax Shipments.

23894. June 22.—Re complaint of Northwest Grain Dealers' Association against provisions of Supplement 3 to C.P.R. Special Tariff, C.R.C. no. W-1962; Supplement 1 to Canadian Northern Ry. Tariff, C.R.C. no. W-803; and Supplement 1 to Grand Trunk Pacific Ry. Tariff, C.R.C. 30, being special tariffs on grain and its products to those companies' terminal ports on Lake Superior: It is ordered that the conditions with respect to the shipment of flax seed in bulk, effective Oct. 12, 1914, as set out in the said supplements be disallowed, and the following substituted therefor: "Flax seed will be accepted for shipment in bulk only at owner's risk of leakage, in accordance with Canadian Freight Classification; except that if shippers make written request for cars suitably lined at their expense, such cars will be furnished with the least necessary delay, in which case this company will assume the risk of leakage."

### Quebec and Lake St. John Railway Fares.

23877. June 19.—The application of W. H. Brown, of Quebec, under sec. 284, 331, 332, 339 and 395 of the Railway Act, for an order directing the Quebec and Lake St. John Ry. to sell 10-trip series of tickets from Quebec to St. Catharines station, at a rate of 40 cts. each: It is ordered that the application be refused.

### London and Port Stanley Ry. Tariffs.

23900. June 26.—The application of London and Port Stanley Ry., under sec. 327 and 331 of the Railway Act, for approval of its Standard Passenger Tariff, C.R.C. 1, and its Standard Freight Tariff, C.R.C. 1: It is ordered that the said Standard Passenger Tariff, C.R.C. 1, on the basis of 2½ cts. a mile, and the Standard Freight Tariff, C.R.C. 1, be approved.

### Cleaning and Disinfecting Stock Cars.

23927. Re application of Toronto Livestock Exchange, the Livestock Shippers' Association of Ontario, and others for an order disallowing charge to be made by railway companies for cleaning and disinfecting livestock cars: Upon reading what is alleged, and pending a hearing at Toronto on a date to be fixed by the Board, it is ordered that the regulation making a charge of \$2.50 a car for cleaning and disinfecting single deck stock or box cars, and \$4 for double deck stock cars, as contained in the following schedules, be suspended—Pere Marquette, C.R.C. 1962; Grand Trunk, C.R.C. 3174; Canadian Northern, C.R.C. E-668; Canadian Northern, Supplement 7 to C.R.C. W-810; Canadian Pacific, C.R.C. E-3011; Canadian Pacific, C.R.C. W-2050; Esquimalt & Nanaimo, C.R.C. 297; Grand Trunk Pacific, Supplement 1 to C.R.C. 84; Great Northern, Supplement 46 to C.R.C. 869; and it is further ordered that the following schedules in effect on the dates shown, and containing the same regulation, be disallowed, pending the hearing aforesaid—Toronto, Hamilton & Buffalo, C.R.C. 1050, effective April 1, 1915; Ottawa & New York, C.R.C. 1109, effective June 15, 1915; New York Central, C.R.C. 454, effective June 5, 1915.

**C.P.R. Employees' Medical Association for British Columbia Division.**—The first year's operations of this association are reported to have been successful and to have demonstrated the necessity for its existence. The officers for the current year are:—President, F. W. Peters, Vancouver; Vice President, G. R. Thompson, Smelter; Secretary, A. M. Innes, Vancouver; Executive Committee: D. A. Munro, Dr. Proctor, Vancouver; R. H. Urquhart, Revelstoke; F. R. McCharles, Nelson.



## Toronto, Hamilton and Buffalo Railway Annual Report.

Following is a summary of the annual report for the calendar year 1914: The company operates 79.88 miles of main line, 7.39 miles of branches and over 4.36 miles of other companies' lines under trackage rights. It has 9.79 miles of second track; 65.10 miles of yard tracks and sidings, and leases to the C.P.R. 1.50 miles of its double track.

The total operating revenue for the year was \$1,313,562.21, of which \$810,734.81 was from freight and \$385,744.71 from passengers. This was a decrease from 1913 of \$434,353.20, the freight revenue decreasing \$361,843.11 and the passenger revenue \$42,939.71. The operating expenses were \$954,177.39, a decrease of \$216,009.81, and amounted to 72.64% of operating revenue, an increase of 5.62% over 1913.

After payment of a dividend of 3% on the outstanding capital stock, a surplus of \$116,292.30 was carried to profit and loss account, to the credit of which there is now \$948,920.24. Of the \$5,000,000 of capital

age number per train mile, 55.77; average number per car mile, 17.98; average number of cars per train mile, 4.67; average amount received from each passenger, 63 cts.; average revenue per passenger per mile, 2.17 cts.; average passenger service train revenue per train mile, \$1.33.

The rolling stock at Dec. 31, 1914, consisted of 30 locomotives, 23½ passenger cars (this includes 34.23% of 19 cars in joint services); 228 freight cars, and 23 cars in company's service, owned, and 4 locomotives, and 1,299 cars leased under equipment trusts.

During the year the company entered into an agreement with the Erie and Ontario Ry., whereby a line from Smithville to Dunnville, practically 15 miles, was built and opened for traffic Dec. 22. This line is to be extended to Port Maitland, a further distance of five miles. The total cost of construction, together with lands acquired in connection with the extension to Port

## The Freight Claim Association Elects a Canadian President.

The Freight Claim Association, which is composed of freight claim agents of the various railways in Canada, the United States and Mexico, at its annual meeting in Chicago recently, elected as President Edward Arnold, Freight Claim Agent, G. T. R., Montreal. He was born at Kingston, Ont., Aug. 26, 1864. He entered G. T. R. service in 1880, serving as operator, ticket agent and relieving agent between Montreal and Toronto. He was employed at Chicago for a number of years handling claim correspondence, and was Travelling Freight Claim Agent at Battle Creek, Mich., for a number of years. In April, 1908, he was appointed Freight Claim Agent with office at Montreal. He has served on all the important committees of the Freight Claim Association since 1908, was Arbitrator for a number of years, and on resigning that position in June 1913, was elected 2nd Vice-President of the As-



The Quebec Bridge, showing Progress of Construction to June 18.

stock authorized there was outstanding Dec. 31, 1914, \$3,500,000; the funded indebtedness was \$5,555,000, there being a reduction of \$150,000 during the year on account of the repayment of equipment trust bonds.

Statistics—Revenue train mileage, 446,617; non revenue train mileage, 11,393; revenue locomotive mileage, 731,234; non revenue locomotive mileage, 39,706 (these latter two sets of figures include other companies locomotives in joint service); revenue car mileage, 6,147,358; non revenue car mileage, 185,370; revenue freight carried, 1,919,251 tons; non revenue freight, 7,116 tons; total tons of freight carried one mile, 72,947,390; total tons of freight carried one mile per mile of road, 796,108; average distance haul of one ton, 38 miles; average number of tons of freight per train mile, 576; average amount received for each ton of freight, \$0.42; average revenue per train mile, \$6.40; average revenue per mile of road, \$8,847.92; average revenue per ton, per mile, 1.113 cts. Passengers carried, 615,151; total carried one mile, 17,764,890; total carried one mile per mile of road, 210,884; average distance carried, 28.88; aver-

age number per train mile, 55.77; average number per car mile, 17.98; average number of cars per train mile, 4.67; average amount received from each passenger, 63 cts.; average revenue per passenger per mile, 2.17 cts.; average passenger service train revenue per train mile, \$1.33.

The report refers to the project for the elimination of grade crossings in Hamilton, and after reviewing what was done during the year adds: "The matter is now pending under the original application (to the Board of Railway Commissioners), and it is believed that this company will succeed in having the plans (for the elevation of the tracks for a distance of half a mile and the carrying of the intersecting highways underneath) adopted and approved. The expense will be, under the Railway Act, apportioned by the Commission among the various interests affected, such interests being the City of Hamilton, the County of Wentworth, the Hamilton Street Ry. Co. and this company."

The Grand Trunk Pacific Ry. Hotel, the Macdonald, Edmonton, Alberta, was opened July 6.

sociation. In May 1914 he was elected 1st Vice-President.

Until 1913, the object of the Association was stated to be the prompt and proper settlement of freight claims with claimants and between carriers. Recently, the General Managers' Association decided that the Freight Claim Association should also study the causes of claims and application of preventative measures. The Freight Claim Association responded at Galveston in 1914 by broadening its constitution and electing a committee of five on cause and prevention. This committee was added to, and now comprises nine members, whose duties are to make an exhaustive study of the causes of loss and damage claims, and proper application of preventative measures. It is expected that good results will be accomplished along these lines during the coming year, and that recommendations to be made to the General Managers' Association, if approved by that body, will have a tendency to cause a large reduction in the enormous amounts paid out in loss and damage claims, the amount disbursed for the year 1914 being about \$35,000,000.



### Transportation Routes to Northern Alberta.

The accompanying sketch map shows the principal points in the northern part of Alberta which is the gateway for the railway lines and the water routes available.

The Canadian Northern Ry. has a train leaving Edmonton 9 a.m. Mondays, Wednesdays and Fridays, and arriving Athabasca Landing (now called Athabasca) 95 miles distant, at 4.10 p.m.

The Edmonton, Dunvegan and British Columbia Ry. is in operation to McLennan, 262 miles northwest of Edmonton, passing through Smith and Sawridge. Train leaves Edmonton 7.30 a.m. Tuesdays and Fridays, and is due at McLennan 3.40 a.m. Wednesdays and Saturdays. Stage runs from McLennan to Peace River Crossing, 11 miles, and connects with the train. The line is under construction to Peace River Crossing and to Spirit River (southwest of Dunvegan), and is expected to be into Grand Prairie next spring. The E.D. & B.C. station at Edmonton is outside the city, on the St. Albert trail, some five miles distant from the C.P.R. station.

The Hudson's Bay Co. advise that the only way of getting from Athabasca (Landing) to Lake Athabasca is by scow or canoe, and that no one should go without employing expert river men—the safest way to travel is by a scow weighing about seven tons and requiring a steersman and at least three other men—the trip would take, under best conditions, 20 days. Fond du Lac, where silver and nickel are reported to have been found, is at the east end of Lake Athabasca and 587 miles from Athabasca (Landing). It would be impossible to proceed across Lake Athabasca to Fond du Lac by scow unless arrangements could be made to have the scow towed by either of the tugs which are on the lake. The Hudson's Bay Co. during the summer season operates steamboats between Peace River Crossing and Hudson's Hope on the west and Ft. Vermilion and Vermilion Chutes on the east, leaving Peace River Crossing whenever sufficient cargo has been secured—also the steamboat Fort McMurray between Peace River Crossing, the Chutes and Smiths Landing and between Smiths Landing and Fort McMurray, leaving Vermilion Chutes and Fort McMurray whenever sufficient cargo has been secured.

The Peace River Navigation Co., Ltd., has during the summer a steamboat leave Peace River Crossing on the 1st and 15th of each month for Fort Vermilion, connecting with Hudson's Bay Co.'s steamers for Fort Chipewyan and the Mackenzie River; Fort Chipewyan being at the western end of Lake Athabasca, the Lake and Fond du Lac may be reached this way also. The P.R.N. Co. also has a steamboat leave Peace River Crossing the 8th and 23rd of each month for Dunvegan, Fort St. John and Hudson's Hope. The P.R.N. Co. may also place a steamboat in service on the Athabasca River, but nothing is decided.

People for Grand Prairie and the Peace River Block travel via Peace River Crossing

### Railway Rolling Stock Notes.

The Asbestos and Asbestic Co., Asbestos, Que., has ordered one 6 wheel switching locomotive from Canadian Locomotive Co.

The Grand Trunk Pacific Ry. has received an express refrigerator car, no. 6047, making 48 received on an order of 50, from Canadian Car and Foundry Co.

The Intercolonial Ry. built in its Moncton shops recently, a tank car for dealing with forest fires. It is not a new car, but has been arranged by placing a tank of about 10,000 gals. capacity on a flat car. It is equipped with a pump, which can be connected to the locomotive, thus securing a pressure of at least 60 lbs.

The Imperial Oil Co. has ordered 75 steel underframes, trucks and tank trimmings, for tank cars of 10,000 gallons capacity, from Canadian Car and Foundry Co. The trucks are of 40 tons capacity, standard gauge, length over buffers 36 ft. 3 ins., truck centres 26 ft. The tanks will be applied to the cars by the Imperial Oil Co., at Sarnia, Ont.

Toronto Mail and Empire:—"It sounds like 'good old times' to hear of large orders for cars and locomotives being placed with the railway rolling stock companies of this country. After the freight moving equipment has been procured for the National Transcontinental the requirements of the Hudson Bay Ry. will have to be looked after. It is a queer year in this young country when railway equipment business does not spring up from somewhere."

Canadian Explosives, Ltd., has ordered 3 wooden box cars, each of 2 tons capacity, from Canadian Car and Foundry Co. Following are the chief measurements,—

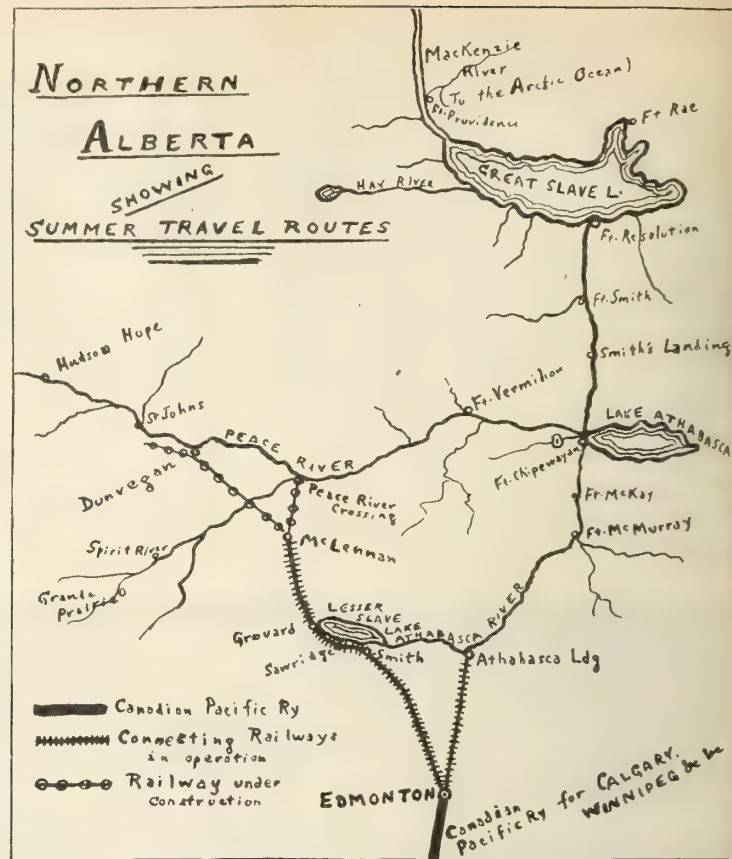
Length inside ..... 15 ft. 6 ins.  
Length over buffers ..... 19 ft. 10½ ins.  
Width over side posts ..... 5 ft. 4¾ ins.  
Height top of rail to top of roof ..... 9 ft. 0¼ ins.  
Height top of floor to roof ..... 6 ft. 7¾ ins.  
Gauge of track ..... 3 ft.  
Wheels ..... 24 ins. cast iron  
Wheel base ..... 6 ft.

Following are some details of the 50 decapod (2-10-0) locomotives which the Russian Government has ordered from Canadian Locomotive Co., as mentioned in our last issue,—

Gauge ..... 5 ft.  
Cylinder ..... 25 x 28 ins.  
Drivers ..... 52 ins.  
Weight in running order, engine ..... 198,000 lbs.  
Weight in running order, tender ..... 132,000 lbs.  
Boiler pressure ..... 180 lbs.  
Heating surface ..... 2,623 sq. ft.  
Grate area ..... 64.5 sq. ft.  
Superheating surface ..... 541 sq. ft.

The British War Office has ordered 1,200 box cars from Canadian Car and Foundry Co., each equipped with two side buffers on each end, and wooden steps at each side door. They are to be of the Belgian type, delivery to commence in 60 days from date of contract. Following are the chief details,—

Capacity ..... 15 metric tons  
Style ..... Steel frame inside sheathed  
Trucks ..... Single  
Wheels ..... Rolled steel, 33 ins. diar.  
Length over end sills ..... 24 ft. 1¾ ins.  
Couplings ..... Screw arrangement  
Side lining ..... 1 in.



End lining ..... 1 3-16 ins.  
Side posts ..... 3 in. channels  
End posts ..... 4 in. I. beams  
Brakes ..... Hand only, Stillmant type  
Roof ..... 13-16 in. wood with canvas covering  
Doors ..... Two side doors with bottom rollers  
Draft rigging—Continuous in connection with volute springs.

Carlines ..... Channel type, flooring 1¾ ins.

Following are chief details of the 15 consolidation (2-8-0) locomotives which the Canadian Government Railways ordered from Canadian Locomotive Co., as mentioned in our last issue,—

Weight on drivers ..... 208,000 lbs.  
Weight in working order, total ..... 236,000 lbs.  
Wheel base, rigid ..... 16 ft. 6 ins.  
Wheel base, total ..... 25 ft. 5 ins.  
Wheel base, engine and tender ..... 69 ft. 11 ins.  
Heating surface, firebox ..... 207 sq. ft.  
Heating surface, tubes ..... 1,885 sq. ft.  
Heating surface, total ..... 2,092 sq. ft.  
Driving wheels, diar. ..... 63 ins.  
Driving wheels, material ..... Cast steel  
Driving journals ..... 10 by 14 ins.  
Cylinders, diar. and stroke ..... 24 by 32 ins.  
Boiler, type ..... Straight top, radial stay  
Boiler pressure ..... 180 lbs.  
Tubes, no. and diar ..... 227 2 ins.; 30 5½ ins.  
Tubes, length ..... 15 ft. 2¾ ins.  
Injectors and safety valves ..... Locomotive type  
Brakes ..... Westinghouse American  
Packing ..... Metallic  
Superheater ..... Schmidt type A.  
Superheater ..... Schmidt type A  
Weight of tender loaded ..... 140,000 lbs.  
Tank capacity ..... 6,500 imp. gals.  
Coal capacity ..... 10 tons  
Tender truck ..... Outside equalized  
Tender wheels ..... 34 ins. diar.  
Wheel, type ..... W. I. centre steel tued.  
Truck journals ..... 5½ by 10 ins.  
Brake beam ..... Steel I section

Following are the details of the 50 decapod (2-10-0) locomotives which the Russian Government has ordered from Canadian Locomotive Co., as mentioned in our last issue,—

Gauge ..... 5 ft.  
Weight on drivers ..... 176,000 lbs.  
Weight, total ..... 198,000 lbs.  
Wheel base, rigid ..... 18 ft. 8 ins.  
Wheel base, total ..... 27 ft. 10 ins.  
Wheel base, engine and tender ..... 60 ft. 1½ ins.  
Heating surface, firebox ..... 196 sq. ft.  
Heating surface, tubes ..... 2,428 sq. ft.  
Heating surface, total ..... 2,624 sq. ft.  
Driving wheels, diar. ..... 52 ins.  
Driving wheel centres ..... Cast steel  
Driving journals ..... 10½ by 12 ins., and 8½ by 12 ins.



Cylinders, diar. and stroke .....	25 by 28 ins.
Boiler, type .....	Straight top, radial stays
Boiler pressure .....	180 lbs.
Tubes, no. and diar. ....	195 2 ins.; 28 5/8 ins.
Tubes, length .....	17 ft.
Injectors .....	Two on back head
Safety valves .....	Two on main dome
Brakes .....	Westinghouse
Packing .....	Metallic
Superheater .....	Schmidt double loop
Firebox plate .....	Copper
Fire door .....	Franklin
Reverse gear, Rushton screw type with air motor	
Radial buffer, Economy device, Corporation type	
Arch brick .....	Security arch
Weight of tender loaded .....	132,000 lbs.
Tank capacity .....	6,200 imp. gals.
Coal capacity .....	9 to 10 tons
Tender truck, type, Arch bar with C.S. bolsters	
Wheels, diar. ....	36 ins.
Wheels, type .....	Solid forged steel
Journals .....	7 1/2 by 16 ins.
Brake beam .....	High speed type

### Canadian Pacific Railway Construction, Betterments, Etc.

**Quebec Terminals.**—A contract for the erection of the new passenger station near the old Palais station has been let to the Downing-Cook Co., Ltd., which completed the freight terminal buildings there recently.

**Montreal Terminus.**—The Board of Railway Commissioners has authorized the building of two additional tracks across Greene Ave., Westmount.

**Eastern Division.**—The Glengarry & Stormont Ry., which was opened recently, is being operated as the Cornwall Subdivision, Eastern Division. Starting from St. Poly-carpe Jct., the stations on the branch are: Bridge End, mileage 6.6; North Lancaster, 10.4; Glen Gordon, 14.1; Williamstown, 17.7; Glenbrook, 21.6; Cornwall, 29.00.

**Manitoba Division.**—The C.P.R. subway at Main St., Winnipeg, is reported to be completed, and ready for the filling in of the roadway and raising of the grade. The filling in is to be done by the C.P.R., and the other work necessary is to be done by the city.

**Alberta Division.**—The point on the old Alberta Ry. and Irrigation Co.'s line, known as Montana Jct., has been finally done away with and the buildings moved. A local paper says: "The junction was built in 1890, when the old turkey trail from Lethbridge to the boundary was completed by the A.R. & I. Co. Just one mile from the station this line joined the narrow gauge from Dunmore Jct., which had been built in 1885. Some years later, when the C.P.R. bought this line, they widened the gauge to standard. From the junction to the station the road had three rails, the narrow gauge using one of the C.P.R. rails and one of its own between the other two. This spring the C.P.R. doubletracked the line from the old junction to the station, so that now the line from Coutts and the one from Medicine Hat do not meet, but run parallel into the city."

**British Columbia Division.**—Work is reported to have been restarted on the Porcupine fill in the Boundary country. The work is the filling of a high piece of trestle work on which a start was made in the fall of 1914. W. P. Tierney, Vancouver, is the contractor. (July, pg. 258.)

**Transmission Lines Crossing Railways.**—The Board of Railway Commissioners has notified the owners of electric power transmission lines to file on or before Aug. 7, reasons, if any, why there should not go into effect on that date an order reading as follows: "All the insulators at wire crossings, which are operated at a potential of 10,000 volts or over, are to be renewed or tested, and reported upon on or before Nov. 1, 1915, and until further notice at least once annually thereafter."

## Kettle Valley Railway Construction.

The Kettle Valley Ry. is now operating 274.8 miles of line, from the C.P.R. Crowsnest branch at Midway, B. C., to a junction with the C.P.R. Nicola branch at Merritt, B.C., thus giving a double route westerly from Calgary. A section of this line from Coldwater Junction to Merritt, 23 miles, will eventually be a branch line, as the main line will run down the Coquihalla Valley to Hope, effecting a junction there with the C.P.R., by bridge across the Fraser River. The line now being operated is not the line originally planned, by the act and its amendments. Early in 1914 an arrangement was made by which the section from Osprey Lake to the Hope Mountains via Aspen Grove, 65.5 miles, was abandoned temporarily, in favor of a line from Osprey Lake to a junction with the Vancouver, Victoria and Eastern Ry. at Princeton, and the joint use of that company's line from Princeton to the Hope Mountains, 40 miles. As originally located the line from Midway to Merritt was 267.8 miles long, but as now constructed it is 274.8 miles. Previously an arrangement was made with the V., V. and E. Ry. by which it would use jointly with the K. V. Ry. the Coquihalla line from Coldwater Jct. to Hope, 53 miles.

In Canadian Railway and Marine World for Feb., 1914, pg. 80, a statement was given as to the conception of the company, the various agreements under which the line was being built, the contracts let, and the progress made to that date, together with a plan of the line as originally laid out. Subsequently details were given of the several agreements with the V., V. and E. Ry., and of the progress made on the several contracts. Since the line has been opened from Midway to Merritt, an official statement has been issued covering the whole work. From this the following particulars have been extracted:—

**Surveys and Construction.**—Location started in 1910, a number of parties being sent out in the early spring. In July of that year the first grading was done at the Merritt end, where a connection is now made with the C.P.R., by Macdonell, Gzowski & Co. This company had a contract for the work from Merritt south to Otter Summit, 30 miles, which was finished in 1911. At the same time work was being carried out on the Midway section, where Rice and Co. had a contract for 35 miles west from that point. This also was finished the next year. Surveys were going on simultaneously, the surveyors having considerable difficulty in fixing the final location lines. The Kettle Valley Ry. runs across mountain chains instead of paralleling them, as is usually the case with railways, and thus it has to cross three ranges, the Kettle-Okanagan, the Okanagan-Similkameen and the Hope. A third grading contract was given in 1911, this going to Rice and Co., for the 40 miles from mile 35 west of Midway to mile 75, at Hydraulic Summit. This grading was finished in 1912, and in 1913 the bridges were completed. The same firm got the contract for the section from Penticton to Osprey Lake and finished it in 1912. During that year, also, the section from Hydraulic Summit west to Penticton, a distance of 58 1/2 miles, was completed by Grant, Smith and Co. Twohy Bros. graded the 13 miles from Coldwater Jct. to Coquihalla Summit, and McArthur Bros. the 40 miles from the latter point to Hope, finishing it in 1914, except for a number of the bridges. In 1913 Guthrie, McDougall and Co. got a contract for grading the line from Osprey Lake to Princeton, 31 miles, and work on this was begun and finished in 1914.

**Track laying.**—The first steel was laid in 1910, by Macdonell, Gzowski and Co., for 10 miles south from Merritt. In 1911 Rice and Co. laid steel for 35 miles west from Midway and another 20 miles was laid on the Merritt end by the contractors there. In 1912 Penticton saw its first steel, seven miles being laid west to Trout Creek Canyon by Kettle Valley workmen. Another 11 miles of steel was added on the Rice contract stretch from mile 35, west of Midway, to mile 46. The year 1913 saw the finishing of laying of steel from mile 46, west of Midway to mile 75, Hydraulic Summit, by the railway itself, K.V.R. workmen that same year also laying seven miles of steel from Hydraulic Summit towards Penticton. In addition, the K.V.R. finished steel laying from Trout Creek to mile 40 west of Penticton, being to Osprey Lake, and also laid rails for 11 miles from Coldwater Junction to Coquihalla Summit. Last year steel was finished by the K.V.R. between Penticton and Hydraulic Summit, 51 miles being laid. Two additional miles of rails was also put down by the railway on the Towhy Bros. contract at Coquihalla and three miles on the McArthur Bros.' section over the Coquihalla Summit. Another two miles was laid at the Hope end, from the C.P.R. tracks to the river bridge there. This year steel has been finished from Osprey Lake to Princeton; another eight miles has been laid at the Hope end of the cut off, and two miles more at the upper end, leaving 25 miles to be laid to finish the cut off line. This work will undoubtedly be finished this year.

**Bridge work.**—There are many large bridges on the line, the largest being that which is across the Fraser at Hope, where the line crosses from the cut off to the connection with the C.P.R. at Hope. This structure is 960 ft. long, having 4 steel spans of 240 ft. each. A highway for pedestrians and vehicles is provided above the railway track deck of the bridge. The bridge was finished this year. The highest bridge on the K.V.R. is at Trout Creek Canyon, a few miles out of Penticton. It is 245 ft. above the water. The steel work on the bridge, which was built in 1913, is 250 ft. long and the approaches 450, making a total length of 700 ft. Two or three of the bridges now under way in the Hope cut off section are worthy of more than passing interest. There is one over Ladner Creek which is 230 ft. high and 600 ft. long. Another bridge, over Slide Creek is 400 ft. long having a single span of 320 ft. Canyon Creek, east of Princeton is bridged by a wooden trestle, which is 180 ft. high.

A. McCulloch is Chief Engineer in charge of the work.

**Railways and Weed Destruction in Saskatchewan.**—The railway companies are co-operating with the Saskatchewan Agricultural Department in weed extermination. Each railway is furnishing a gasoline track motor car and a man to operate it, and the department is sending out a man skilled in the destruction of weeds. Work was started on the C.P.R. June 15, and it was estimated it would take three months to cover the line. On June 17 work was started on the Canadian Northern Ry., which will be covered by Aug. 31, and work was started on the Grand Trunk Pacific Ry., July 19, one month being allotted to cover its lines. The work being done not only covers the eradication of weeds on the railway right of way, but the instruction of the people in every town, village, and settlement point along the line as to the best means to be adopted to destroy weeds, with practical demonstrations.



## Railway Development.

### Projected Lines, Surveys, Construction, Betterments, Etc.

**Athabasca and Fort Vermillion Ry.**—A. C. Galbraith, with a staff of engineers, is reported to have arrived at Athabasca Landing, Alberta, June 21, to start a survey for this projected railway to Fort Vermillion. He started work at once on making a survey for a site for a bridge to cross the river, and as soon as a suitable location is secured, will, it is stated, start on a reconnaissance survey to Fort Vermillion. The party includes F. P. Wilson and F. D. Rice, who represent D. A. Thomas, Cardiff, Wales, who is investigating the project in connection with his Pacific, Peace River and Athabasca Ry. project. (July, pg. 255.)

**The Dominion Atlantic Ry.'s locomotive house** at Kentville, N. S., was destroyed by fire, July 7, the machine shop being saved. It is reported that the locomotive house will be rebuilt at once. (June, pg. 222.)

**Edmonton, Dunvegan and British Columbia Ry.**—Grading on the section from Smoky River to the Spirit River was reported to be 45% completed, June 30. The remainder of the work is classed as heavy, but it is expected to have it completed by Oct. 1. The grading contractor is A. T. Wright.

The Board of Railway Commissioners has approved of location plans for the line through tp. 76, ranges 21, 22 and 23, west 5th meridian, mileage 269.85 to 286.65, and through tp. 78, ranges 3 and 6, and tp. 77, ranges 4 and 5, west 6th meridian, mileage 331.77 to 357. We are officially advised that the revised location in tps. 77 and 78, ranges 1-6, west sixth meridian, 27 miles, is a minor revision, rendered necessary owing to the fact that original location was made from the preliminary line, and the new location varied more than one mile from it.

The grading outfit of G. H. Webster, Calgary, arrived at Spirit River early in July. The contract covers the grading of about 60 miles in the Grand Prairie Settlement, and it is expected to have it completed this season. J. D. McArthur, President, is reported to have said it is hoped to have tracklaying on the line from the Smoky River completed to the Spirit River by Christmas, when it will be gone on with on the Grand Prairie branch. It is hoped to have the line ready for traffic by the summer of 1916. The construction generally is average, but there is some heavy work to be done in the vicinity of the Saddle Mountains. (July, pg. 255.)

**Halifax and Southwestern Ry.**—Tenders are said to be under consideration for building of a passenger station at Yarmouth, N.S. J. Bain, is General Superintendent, Bridge-water, N.S. (Nov., 1912, pg. 557.)

**Intercolonial Ry.**—We are officially advised that the management is not at present considering the renewal of the superstructure of the bridge across the St. John River at Fredericton, N. B., as stated in a press report. (July, pg. 255.)

**Kettle Valley Lines.**—According to press reports, about 25 miles of tracklaying is yet required to complete the line from Otter Summit to Hope, B. C., which it is hoped will be fully completed this year. There are two bridge structures of some importance on the Otter Summit-Hope section, viz.: that over Ladner Creek, 600 ft. long, and 230 ft. above high water mark, and that at Slide Creek, 400 ft. long. The most important bridge, however, is that across the Fraser River at Hope, which consists of four steel spans of 240 ft. each on concrete piers and abutments.

Snow sheds are to be built on the line in the Coquitlam Valley, for which purpose

orders are said to have been placed for 13,000,000 ft. of lumber. (July, pg. 255.)

**Lake Huron and Northern Ontario Ry.**—At the annual meeting of shareholders called to be held at Sault Ste. Marie, Ont., July 30, in addition to the business of electing directors and passing accounts, the shareholders were to be asked to approve of all the acts done, and agreements entered into by the directors since the last annual meeting.

A press report states that a contract has been let by the National Engineering Co., Cleveland, Ohio, for the building of the line from Sault Ste. Marie to a junction with the National Transcontinental Ry., between Cochrane and Hearst, Ont., about 300 miles. The company owns a line from Bruce Mines to Rock Lake, 17 miles, and the contract, it is said, calls for a line in extension of this along the Mississauga River, through the forest reserve, into the Sudbury district, crossing the C. P. R. and the Canadian Northern transcontinental lines, and terminating by a junction with the N. T. R. The line would run through a new country, and the construction will involve the building of 14 steel bridges, one of which, it is stated, would be 750 ft. long. It is said that the National Engineering Co. is endeavoring to finance the building of the line, and of course there will not be any construction work undertaken until this has been arranged. The President of the Lake Huron and Northern Ry. advises us that the report referred to is premature. (April, pg. 176.)

**Toronto Union Station.**—Press reports state that arrangements have been made with the Bank of Montreal for advances of \$4,000,000 on the guarantee of the C.P.R. and the G.T.R. for the purpose of financing the construction of the new Union Station on Front St., Toronto. There are at the time of writing no signs of activity at the site.

### Progress of the Rogers Pass Tunnel Construction, Canadian Pacific Railway.

The following table shows the progress made during June, also the totals to June 30, for which we are indebted to J. G. Sullivan, M. Can. Soc. C.E., Chief Engineer, C.P.R. The figures give the number of feet. There were a number of corrections, which accounts for the difference in totals:

EAST END—	Progress.	Total.
Pioneer tunnel .....	897	10,128
Main heading .....	562	6,012
Main tunnel .....	787	4,556
WEST END—		
Pioneer tunnel .....	961	8,231
Main heading .....	529	6,601
Main tunnel .....	867	3,032

**Liquors on Canadian Northern Dining Cars.**—The C.N.R. management at Winnipeg has denied the report that liquors will not be sold on its dining cars. The statement says: "Owing to the present license laws in Manitoba, we are unable to sell liquors on our main line, the Alberta Express and the Capital Cities Express, as they leave after 7 p.m. and arrive at an early hour in the morning; therefore, demand for liquor is a negligible quantity. Liquors, etc., will be carried on the dining cars as in the past for the accommodation of the travelling public, subject to the liquor laws of each province. Commencing July 1, it is illegal to sell any liquor in Saskatchewan."

### Dominion Government Railway to Hudson Bay.

A contract is reported to have been let to R. McDonald, Winnipeg, for the substructure of the bridge across the Nelson River, at Manitou Rapids. The superstructure will be of steel, of the cantilever type, and will be fabricated and erected by the Canadian Bridge Co.

J. D. McArthur, the general contractor, is reported to have stated recently that the grading gangs have reached to within 50 miles of Port Nelson and that the whole of the grading will be completed this year. The track laying will not be completed until the spring of 1916.

Chief Engineer Porter is reported to have said in Winnipeg, July 13, that the construction of the terminals at Pas, Man., would not be started until the spring of 1916. The plans are under consideration by the Railways Department. The contracts, when let, will call for the completion of the work in time for the opening of the line right through in 1917.

The question of operating part of the line by electricity is said to be under consideration and it is reported that the water falls of the Nelson and Grass Rivers are being examined with a view of determining how far they are available for the development of power to be used on the line.

Timber and other materials for the terminal work at Port Nelson are being forwarded by steamship from Halifax, N.S., and one cargo of special timber has been despatched from Vancouver, B.C., a 10,000 mile voyage. (June, pg. 225.)

### Qu'Appelle, Long Lake and Saskatchewan Railroad Land Grants.

The Saskatchewan Legislature has ordered that an address be presented to the Lieutenant Governor asking that a resolution passed June 24 respecting various contracts made between the Dominion Government and the Qu'Appelle, Long Lake and Saskatchewan Rd. and Steamboat Co. be forwarded to the Secretary of State for transmission to the Governor General in Council. The resolution stated that, in the Legislature's opinion, a serious drawback to municipal progress and a gross injustice to the people of the province would be removed if the Dominion Government would at once take the necessary steps towards winding up the contract with the company and the releasing of the lands in question so that they might be liable for a just portion of taxation.

The preamble of the resolution states that under the contracts of 1884, 1887 and 1889 it was provided, among other things, that 6,400 acres of land a mile be made to the company; that the company should receive for 20 years from 1889, \$80,000 a year, and that until a final settlement between the Government and the company, one third of the land be retained by the Government. The land grant carried is 1,625,244 acres, of which one third has been retained under the contract. All the land retained is exempted from taxation, but under a contract of 1907 the Saskatoon and Western Land Co., to which company the railway company's lands had been transferred, it was agreed that the retained lands might be sold on condition that \$5 an acre of the price obtained be paid to the Government, the lands thus sold becoming taxable. A large area of the lands still remains unsold, and as the 20 years from 1889 has expired the province desires that the accounts be adjusted and the contract wound up so that the lands may be taxed by the various municipalities.



# Mainly About Railway People Throughout Canada.

**W. E. Foster**, Solicitor, G. T. R., Montreal, has been appointed a K. C.

**Sir William Van Horne** is in residence at his summer home, Covenhoven, St. Andrews, N. B.

**J. R. McDonald**, City Ticket Agent, Canadian Northern Ry., Port Arthur, Ont., died suddenly at his work there, July 4.

**A. C. Lewis**, Secretary, Toronto Harbor Commission, is going to the front in the Canadian Overseas Expeditionary Force.

**Geo. Kidd**, General Manager, British Columbia Electric Ry., was the chief speaker at the American Club's luncheon in Vancouver, July 12.

**A. E. Cox**, General Storekeeper, Canadian Northern Ry., Winnipeg, has been elected a member of the Railway Storekeepers' Association's Executive Committee.

**Sir Thomas Shaughnessy**, Lady, and Miss Shaughnessy were in St. Andrews, N. B., at the end of June, when they opened their summer home, Fort Tipperary, for the season.

**Lieut. W. N. Malcolm**, of the Royal Engineers, who was wounded at the Dardanelles, and died at Malta, in June, was, until the commencement of the war, engaged on location surveys with the C.P.R.

**H. Whitehead**, chief ticket agent, C. P. R., Windsor St. station, Montreal, committed suicide by shooting in the station, July 7. He left a letter giving financial embarrassment as the cause of the act.

**J. K. L. Ross**, director, C. P. R., Montreal, is the sole beneficiary of the estate of his mother, Mrs. James Ross, who died in February, without a will. The estate is valued at \$289,639.

**Thomas C. Ashworth**, of the Canadian Overseas Railway Construction Corps, was reported in the casualty list cabled from England on July 6 as seriously wounded in the neck (self inflicted).

**C. Bermingham**, formerly Vice President, Canadian Locomotive Co., Kingston, Ont., and Mrs. Bermingham have given an automobile for Queen's University Stationary Hospital Corps.

**H. Kemp**, employed in the Audit Department, G.T.R., Montreal, was drowned in the Back River, there, July 4, whilst attempting to rescue two boys who got out of their depth, and were eventually rescued.

**S. H. Sykes**, Assistant Chief Engineer, Canadian Northern Pacific Ry., Vancouver, B.C., was presented with a case of silver tableware by the staff there recently, on the occasion of his marriage.

**W. E. Duperow**, Assistant General Passenger Agent, Grand Trunk Pacific Ry., Winnipeg, has been absent from business for a few weeks on account of illness, which the latest report received states may necessitate an operation.

**Lt. Col. J. J. Creelman**, son of A. R. Creelman, K.C., director C.P.R., who suffered from shock caused by the incessant cannonading in the St. Julien battle, was reported on July 6 as recuperating rapidly at Shorncliffe, Eng.

**W. M. Guy**, whose appointment as General Traffic Manager, London and Port Stanley Ry., London, Ont., was announced in our last issue, resigned after three days on duty, for personal reasons, and has returned to Pere Marquette Rd. service.

**J. Edgar LePage**, whose appointment as Division Freight Agent, National Transcontinental Ry., Quebec, Que., was announced in our last issue, was born in 1882,

and entered railway service in 1902, since when he has been, to 1912, in Transportation Department, Intercolonial Ry.; 1912 to 1915 in Traffic Department, same road.

**Thomas Cantley**, heretofore Vice President and General Manager, Nova Scotia Steel and Coal Co., has been elected President of the company, vice R. E. Harris, who has been appointed a judge of the Supreme Court of Nova Scotia. He will also continue to act as General Manager.

**Duncan Ross**, who died suddenly at Victoria, B. C., June 30, was one of the contractors on the Grand Trunk Pacific Ry. construction, having built a section of six miles including a tunnel near Hazelton, B. C., a ten mile section in the South Bulkeley Valley, and a third near Fraser Lake.

**P. E. Ryan**, Secretary, National Transcontinental Railway Commission since its establishment in Sept. 1904, has resigned,



**R. G. Edwards**, Assistant Superintendent, District 2, Eastern Division, Canadian Pacific Railway.

on account of the work being practically completed and the operation of the railway taken over by Canadian Government Railways.

**Major D. R. McCuaig**, 13th Canadian Battalion, who has been awarded the Distinguished Service Order for conspicuous gallantry and ability between Apr. 22 and 24, near Ypres, is a son of C. J. McCuaig, Montreal, President, Sherbrooke Ry. and Power Co.

**T. R. McCarthy**, who died at Montreal, June 30, after a long illness, had carried on a general steamship and freight brokerage and shipping business for 18 years, and acted as agent for the Northern Shipowners' Association, Christiania, Norway, and also as shipping agent for the Asbestos and Asbestic Co., Asbestos, Que.

In announcing the appointment of an acting Manager of the Temiscouata Ry., the President, J. H. Walsh, issued a circular as follows,—“On June 9, **G. G. Grundy**, General Manager of the company, passed away at the

early age of 38, the greater part of his life having been spent in the service of the company. He rendered invaluable services, and his death is to be greatly deplored.”

**Capt. C. L. Conacher**, formerly Traffic Manager, Cambrian Railways, Wales, who visited Canada last year, and who has been serving as a railway transport officer on the War Office staff since October last, has been transferred to the administrative staff of the Ministry of Munitions in London. He will retain his military rank and serve under Sir Percy Girouard, Controller General of the Department.

**Miss Helen G. McNicoll**, daughter of D. McNicoll, director, and formerly Vice President, C. P. R., died at Swanage, England, suddenly, June 27. She had resided in England for several years, where she maintained a studio. Many of her paintings have been exhibited in the Royal Academy. At the outbreak of war in Aug. 1914, she was in Germany, and experienced considerable difficulty in returning to England.

**J. Harvey Hall**, who died at Toronto, July 5, from toxic poisoning following a slight operation, was born at Bolton, Ont., in 1857, and for some time was a conductor on the Toronto, Grey and Bruce Ry. In later years he was President of the local branch of the Order of Railway Conductors, and acted as the parliamentary representative in Canada of the order, spending considerable time in Ottawa.

**Charles A. Stewart**, whose appointment as acting Manager, Temiscouata Ry., Riviere du Loup, Que., was announced in our last issue, was born at Bathurst, N.B., June 19, 1885, and entered Temiscouata Ry. service May 22, 1904, since when he has been, to Mar. 3, 1908, clerk in General Manager's office; Mar. 3, 1908 to Oct. 1, 1909, chief clerk to General Manager; Oct. 1, 1909 to July 1, 1915, Accountant.

**Captain F. A. Wanklyn**, of the Royal Field Artillery, and a flight commander of the Royal Flying Corps, who has been given the military cross, is the eldest son of F. L. Wanklyn, General Executive Assistant, C. P. R., Montreal, and grandson of R. B. Angus, Director, C.P.R., and is 27 years old. His brother, Andrew Wanklyn, B.A., B.C.L., who is 25 years of age, is a lieutenant in the McGill Overseas Corps.

**R. Falshaw Morkill**, Signal Engineer, G.T.R., Montreal, who went to Europe with the 1st Canadian Expeditionary Force as a lieutenant in the engineering corps, has, in recognition of work which he did at the front in France under heavy shell fire, been promoted to a captaincy in the Royal Engineers, and has been posted to the 34th (Norfolk) Divisional Royal Engineers as captain of the 209th company. He expects to return to the front early in August.

**W. McNab**, Principal Assistant Engineer, G. T. R., Montreal, has retired from the board of direction of the American Railway Engineering Association, after 11 years of continuous service. On his retirement, resolutions of appreciation for his services in various positions, including that of President, were passed, and engrossed and bound in book form for presentation. He has been elected an honorary member of the governing board.

**John Macrae**, who has been appointed Locomotive Foreman, C. P. R., North Bend, B. C., was born at Springburn, Glasgow, Scotland, Jan. 30, 1879, and entered C. P. R. service, Feb. 19, 1904, since when he has been, to May 1907, fitter; May 1907 to July 1908, Roundhouse Foreman; July 1908 to



**James H. Night Foreman:** Dec. 1, 1909 to June 10, 1914, Locomotive Foreman, all at Revelstoke, B. C.; July 1, 1914 to June 15, 1915, Shop Foreman, Kamloops, B. C.

**George Bury,** Vice President, C.P.R., arrived in Winnipeg from Montreal, July 6, to make a complete inspection of the company's western line. From Winnipeg west he was accompanied by Grant Hall, Vice President and General Manager, Western Lines; J. G. Sullivan, Chief Engineer, Western Lines, and by the various general superintendents and superintendents over their several jurisdictions. Mr. Bury is expected to return to Montreal early in August.

**A. H. Willet,** whose appointment as Assistant Division Engineer, National Transcontinental Ry., Cochrane, Ont., was announced in our last issue, was educated in Scotland and England, and entered railway service in Canada in 1904, since when he has been, to 1905, on location and construction on the C. P. R. in Manitoba and Alberta; 1905 to 1906, Resident Engineer on Construction, District F, National Transcontinental Ry., Kenora, Ont.; 1909 to 1914, Assistant District Engineer, District D., N. T. R., Cochrane, Ont.

**H. A. Laird,** whose appointment as Division Freight Agent, National Transcontinental Ry., Cochrane, Ont., was announced in our last issue, was born at Brantford, Ont., and entered railway service in 1899, since when he has been, to 1907, in the export and import department, G.T.R., at Montreal and Portland, Me.; 1907 to 1910, Travelling Freight Agent, G.T.R., Montreal; 1910 to May 1914, chief clerk to General Freight Agent, G.T.R., Montreal; May 1914 to June 1, 1915, City Freight Agent, G.T.R., Montreal.

**Ross Garfield Edwards,** whose appointment as Assistant Superintendent, District 2, Eastern Division, C. P. R., Montreal, was announced in our last issue, was born at Maitland, Ont., Oct. 10, 1883, and entered C. P. R. service Dec. 24, 1900, since when he has been, to May 31, 1901, caller; June 1, 1901 to July 1902, checker, July 1902 to Apr. 14, 1904, yard office clerk; Apr. 15, 1904 to Oct. 21, 1906, chief clerk; Oct. 22, 1906 to Apr. 5, 1907, yard man and yard foreman; Apr. 6, 1907 to Feb. 11, 1909, Yardmaster; Feb. 11, 1909 to May 31, 1915, General Yardmaster, all at Smiths Falls, Ont.

**Jos. Bellingham,** whose resignation of the position of Superintendent of Motive Power, Grand Trunk Pacific Ry., was announced in Canadian Railway and Marine World recently, has returned to his former position of General Inspector, American Locomotive Co., and is living in Schenectady, N.Y. The American Locomotive Co. is very busy making shells and cartridge cases for the allies, and expects to be able through all its plants to turn out about 15,000 shells a day. Mr. Bellingham visits all the plants, including Montreal, and reports direct to the Vice President. He has a staff of inspectors at each point.

**Joseph Emile Gibault, A. M. Can. Soc. C. E.,** whose appointment as Resident Engineer, District 2, National Transcontinental Ry., Cochrane, Ont., was announced in our last issue, was born at St. Jerome, Terrebonne County, Que., Nov. 16, 1887. He graduated in science from the Mont St. Louis Institute, Montreal, in 1906, in civil engineering from Laval University in 1910, with the degree of B. A. Sc. He was from May to July 1910, draughtsman, with the Riter Conley Manufacturing Co., Pittsburg, Pa.; Aug. to Dec. 1910, instrument man, District C, National Transcontinental Ry.; Jan. to Mar. 1911, Resident Engineer, District E., N. T. R.; Apr. 1911 to Apr. 1913, Resident Engineer, N. T. R., Armstrong, Ont.; May 1913 to Feb. 1915, Resident Engineer, N. T. R., Cochrane,

**A. R. Macgowan,** whose appointment as Division Engineer, Intercolonial Ry. and Prince Edward Island Ry., Moncton, N.B., was announced in our last issue, was born at Moncton, N.B., Jan. 16, 1883, and entered railway service in Jan., 1899, since when he has been, to June, 1902, clerk in Accountant and Treasurer's office, Intercolonial Ry., Moncton, N.B.; June, 1902, to Mar., 1905, rod man and transit man, I.R.C., Moncton, N.B.; Mar., 1905, to Jan., 1906, contractors' engineer, North Maine Seaport Ry., Bangor, Me.; Jan. to Nov., 1906, Resident Engineer, Somerset Ry., Moosehead, Me.; Nov., 1906, to May, 1915, Assistant Engineer, Intercolonial Ry., Moncton, N.B.

**Arthur S. Piers,** whose appointment as Manager, Real Estate Department, C.P.R., Montreal, was announced in our last issue, was born at Montreal, May 23, 1885, and entered C.P.R. service Jan. 3, 1903, since when he has been, to Sept. 1, 1903, office boy, Freight Traffic Manager's office; Sept. 1, 1903, to July 20, 1904, secretary to Freight Traffic Manager; July 20 to Nov. 1, 1904, secretary to General Freight Agent; Nov. 1,



**J. E. Gibault,**  
Resident Engineer, District 2, National  
Transcontinental Railway.

1904, to Mar. 1, 1907, secretary to Vice President; Mar. 1, 1907, to May 1, 1910, assistant chief clerk to Vice President; May 1 to Aug. 1, 1910, assistant to Right of Way Purchaser; Aug. 1, 1910, to Feb. 1, 1915, Assistant Real Estate Agent; Feb. 1 to June 15, 1915, Real Estate Agent.

**Aaron M. Harvey,** whose appointment as Signal Supervisor, Canadian Government Railways, Moncton, N. B., was announced in our last issue, was born at Champlain, Ill., Sept. 26, 1870, and entered railway service Nov. 1898, since when he has been, to Sept. 1900, fitter, Cleveland, Cincinnati, Chicago and St. Louis Ry., Galion, Ohio; Sept. to Dec. 1900, repair man, Toledo, St. Louis and Western Rd., Frankfort, Ind.; Jan. to July 1901, repair man, Chicago and Eastern Illinois Rd., Danville, Ill.; July 1901 to July 1902, foreman, Toledo, St. Louis and Western Rd., Frankfort, Ind.; July 1902 to July 1907, foreman, Chicago and Eastern Illinois Rd., Danville, Ill.; June 1907 to Dec. 1909, general electric maintainer, same road, Danville, Ill.;

Jan. 1910 to July 1915, General Construction Foreman, Railway Signal Co. of Canada, Lachine, Que.

**Archibald D. Watt,** who has been appointed District Locomotive Foreman, G.T. Pacific Ry., Prince Rupert, B.C., was born at St. Louis Station, Que., Mar. 5, 1874, and entered railway service July 3, 1890, since when he has been, to July 20, 1892, wiper, G.T.R., Montreal; July 20, 1892, to Aug. 16, 1897, fireman, G.T.R., Montreal; Aug. 30, 1897, to Sept. 12, 1902, locomotive driver, G.T.R., Montreal; Oct. 1, 1902, to Nov. 1, 1905, machinist, G.T.R., Point St. Charles Shops, Montreal; Nov. 10, 1905, to Nov. 20, 1906, Locomotive Foreman, Central Vermont Ry., St. Albans, Vt.; Dec. 1, 1906, to Dec. 15, 1907, Locomotive Foreman, Turcot, Que.; Jan. 1 to Dec. 31, 1908, Locomotive Foreman, G.T. Pacific Ry., Melville, Watrous, Sask., and Wainwright, Alta.; Jan. 1, 1909, to Mar. 10, 1910, Mechanical Foreman on construction work west of Edmonton, G.T.P.R.; Mar. 10, 1910, to Feb. 11, 1911, Locomotive Foreman, G.T.P.R., Prince Rupert, B.C.; Feb. 11, 1911, to June 30, 1915, General Foreman, G.T.P.R., Prince Rupert, B.C.

The question of a public memorial to the late **Walter Moberley**, civil engineer, is being discussed in Vancouver. During his lifetime two portraits were placed in public institutions, one in the Vancouver Museum, and a second in the Conservative Association's rooms, whilst one of the public schools in South Vancouver was named the Moberley School. A meeting was held in Vancouver June 29, under the chairmanship of G. R. Gordon, President of the Vancouver Pioneer's Society. It was stated that there was at the credit of the fund which was subscribed during his illness \$400, which could be utilized for the purposes of a permanent public memorial. F. C. Wade, K.C., G. R. G. Conway, M. Can. Soc. C. E., W. Burdes, A. K. Robertson and N. Robinson were appointed a committee to communicate with Sir Thos. G. Shaughnessy as to the placing of a memorial on the C.P.R. at Loggan, to represent Mr. Moberley's work on that line. Suggestions were also made as to a public memorial in Vancouver.

**J. F. Chapman,** Manager, Thousand Islands Ry. and Oshawa Ry., died at Gananoque, Ont., July 19, from heart disease, after an illness of a year, the latter half of which he had been practically confined to his home. The funeral took place at Gananoque, July 21. He was born at Frankford, Ont., Aug. 25, 1863. Having learnt telegraphy, he was appointed first agent of the northern extension of the Central Ontario Ry. at Frankford, and as the line was opened up, he was moved to other stations, being officially located at Coe Hill Mines, the northern terminus. On the closing down of the mines, he entered Bay of Quinte Ry. service, being from June, 1886, to Aug., 1890, chief clerk to General Freight and Passenger Agent, Deseronto, Ont.; Aug., 1890, to Jan., 1895, Superintendent Thousand Islands Ry., Gananoque, Ont.; Jan., 1895, to Jan., 1904, Assistant General Freight and Passenger Agent, Bay of Quinte Ry., Thousand Islands Ry., Oshawa Ry., and Deseronto Navigation Co., Deseronto, Ont.; Jan., 1904, to Jan., 1912, General Freight and Passenger Agent, same lines; Jan. 1912, until his death, Manager, Thousand Islands Ry. and Oshawa Ry.

**Compensation for Carrying Mails.**—Washington, D. C., press dispatch, July 18:—Claims against the Government aggregating \$10,880,865 were filed at the Court of Claims today by the seven New England railways, which allege that they have lost this sum in the past six years through carrying the mails under the present system of weights.



## The Interstate Commerce Commission Cannot Modify Baggage Rules

The following article is reproduced from Greater New York, which is published by the Merchants' Association of New York:—

Attention was called in some detail in Greater New York recently to the baggage regulations imposed by the railways in order to comply with the provisions of the Cummins amendment to the Interstate Commerce Act. In view of the great inconvenience inflicted upon the travelling public by the amendment, and the absence of any real public demand for the application of such a law to baggage and express shipments, the Traffic Bureau asked the Interstate Commerce Commission whether the commission by specific orders could not give the statute an interpretation under which a passenger would not be required to declare the actual value of baggage, except where the actual value was in excess of \$100 for weight of 150 lbs. or less, or 66 2-3 cts. per lb. where the weight was in excess of 150 lbs., and the passenger desired to insure with the carrier for the increased value. In response to this inquiry the Traffic Bureau is in receipt of the following advice:

"Referring again to the correspondence which has passed relative to the declarations of value in connection with checking of baggage under carriers' revised tariffs, I have to say that this matter has been fully considered by the commission, and the commission has directed me to say that the Cummins amendment is but an amendment to the act, which in common with all other portions of the act must be read in connection with other provisions thereof, and that where the carriers' tariffs provide for the declaration of value as a condition of shipment of forwarding the value declared should be the true value."

We are unable to see how a different ruling in this regard could be applied to the forwarding of baggage and to the forwarding of express packages. The Cummins amendment seems to have wiped out all released rates and all provisions therefor. As many of our members are perhaps unaware of the provisions of sec. 10 of the Act to Regulate Commerce, which must be construed in connection with the Cummins amendment, we quote therefrom an abstract of the portions of the section which relate to the duties of a shipper: "Any person, corporation, or company . . . who shall deliver property for transportation to any common carrier . . . who shall knowingly and wilfully, directly or indirectly, himself or by employe, agent, officer, or otherwise, by false billing, false classification, false weighing, false representation of the contents of the package or the substance of the property, false report of weight, false statement, or by any other device or means . . . obtain or attempt to obtain transportation for such property at less than the regular rate then established and in force on the line of transportation; or who shall knowingly and wilfully, directly or indirectly . . . by false statement or representation as to cost, value, nature, or extent of injury . . . knowing same to be false, fictitious, or fraudulent . . . obtain or attempt to obtain any allowance, refund, or payment for damage or otherwise in connection with or growing out of the transportation of or agreement to transport such property . . . whereby the compensation of such carrier for such transportation, either before or after payment, shall in fact be made less than the regular rates then established and in force on the line of transportation, shall be deemed guilty of fraud, which is hereby declared to be a misdemeanor, and

shall, upon conviction . . . be subject for each offense to a fine of not exceeding \$5,000 or imprisonment in the penitentiary for a term of not exceeding two years, or both, in the discretion of the court."

Inasmuch as the Interstate Commerce Commission in its administrative functions must be guided by the law, and as it cannot make administrative rulings at variance with the law, the only recourse apparently is the repeal or modification of the Cummins amendment. A good many controverted questions have arisen and more will probably arise under the amendment. By the time Congress assembles the desirability and necessity for some modification of its provisions will undoubtedly become apparent.

## National Transcontinental Railway Operation.

The most important feature of the operation of the National Transcontinental Ry. by the Dominion Government as part of the Canadian Government Railways, has been the starting of a tri-weekly through passenger service between Toronto and Winnipeg. The first train left Toronto Tuesday, July 13, at 10.45 p.m., for Winnipeg, arriving there on Thursday, July 15, about two hours late, the schedule time for arrival being 3.50 p.m. The first eastbound train left Winnipeg Sunday, July 18, at 5.15 p.m., and arrived in Toronto July 19 at 12.05 p.m. Westbound trains leave Toronto, Tuesdays, Thursdays and Saturdays. Eastbound trains leave Winnipeg, Sundays, Tuesdays and Thursdays.

The service is given by a combination of the G.T.R., the Ontario Government railway (the Timiskaming and Northern Ontario) and the National Transcontinental Ry. The total distance covered by the service is 1,257 miles, distributed as follows: G.T.R., Toronto to North Bay, 227 miles; Timiskaming and Northern Ontario Ry., North Bay to Cochrane, 253 miles; National Transcontinental Ry., Cochrane to Winnipeg, 777 miles. The points on the N.T.R. west of Cochrane at which the train stops, including flag stops, are: Jacksonboro, 512 miles; Fauquier, 530; MacPherson, 550; Mattice, 591; Hearst, 609 (junction with Algoma Central and Hudson Bay Ry.); Kabina, 631; Wilgar, 694; Grant, 734; KowKash, 777; Willett, 842; Armstrong, 866; McDougall's Mill, 987; Lake Superior Jct., 999; Graham, 1,005; Pyrites, 1,012; Quibell, 1,081; Redditt, 1,129; Minaki, 1,143; Dugald, 1,244; Winnipeg, 1,257, all these mileages being calculated from Toronto. The distance from Toronto to Winnipeg, on the C.P.R. via Sudbury, is 1,231.17 miles, and by the Canadian Northern Ry., now nearly ready for operation, it will be 1,229 miles.

The trains being operated in the new service consist of colonist sleeping cars, electric lighted first class coaches, tourist sleeping cars, dining car and standard sleeping cars. The rolling stock is being supplied for the present by the Canadian Government Railways and the Grand Trunk Pacific Railways, and Pullman sleepers are being used until the Government can provide its own.

The new service, which is named the National, is operated in conjunction with the Intercolonial Ry. Ocean Limited from Halifax to Montreal, the G.T.R. International Limited from Montreal to Toronto, and at the Fort Garry Station, Winnipeg, with the G.T. Pacific Ry. to Prince Rupert.

On the line in Quebec and Ontario, not previously operated over, except by contractors' trains, suitable services are being operated, new schedules having been put in operation July 11. Two trains a week each

way are being operated between Québec and Cochrane, 573.16 miles; and a two train a week service from Cochrane to Graham, 524.42 miles, in addition to the National Limited.

The lease of the G.T. Pacific Ry.'s Lake Superior branch from Lake Superior Jct. to Fort William, with its terminals, was signed in Ottawa, July 2. The rental is said to have been fixed at \$600,000 a year for 99 years. (July, pg. 256.)

## Grand Trunk Pacific Railway Construction.

The Saskatchewan Legislature has passed an act extending the time for the building of a number of branch lines, for which the province has guaranteed the bonds of the G.T. Pacific Ry., and of the G.T.P. Saskatchewan Ry., and also extending the time within which these companies may build terminals at Regina, Saskatoon and Moose Jaw, and certain railway bridges, for which the province is guaranteeing the bonds of the companies. While the act specially grants extensions in each case to Dec. 31, 1916, the Lieutenant-Governor in Council is given power to grant further extensions, not exceeding 12 months, if required.

The Board of Railway Commissioners has approved a revised location of the Biggar-Calgary branch, in s.e. ¼ sec. 23, and n.e. ¼ sec. 14, range 3, west third meridian, and amended location for Y turning out from branch at Loverne, Sask.

The company has deposited with the Minister of Public Works, Ottawa, description of site and plan of wharf and ware house proposed to be built in Burrard Inlet Vancouver harbor, in front of Block 1, subdivision of District Lot 196, Vancouver District, and is asking approval of the same. (July, pg. 256.)

**A. E. Doucet's Services Recognized.**—The Quebec Board of Trade, at its annual meeting recently, unanimously passed the following resolution in reference to A. E. Doucet, M. Can. Soc. C.E., who was District Engineer at Quebec during the location and construction of the National Transcontinental Ry.: "The board, in view of the completion of the National Transcontinental Ry., the great new highway from Quebec to Prince Rupert on the Pacific Ocean, takes this opportunity of expressing to A. E. Doucet, R.M.C., the chief engineer in charge of construction in the Province of Quebec, its high appreciation of the great services he has rendered to the City of Quebec and to the province, in having discovered and located the route by the valley of the St. and seaport, and that copies of this resolution be sent to Mr. Doucet, and also to the Prime Minister, the Minister of Railways, Maurice, which shortens the distance between tide water and Winnipeg by no less than 214 miles, secures an almost air line, and makes this great railway tributary to the City of Quebec as its summer terminus and the Postmaster General.

**The Canadian Overseas Railway Construction Corps**, which sailed from Montreal on the s.s. Herschell, June 14, and arrived at Plymouth, Eng., June 23, as previously announced in Canadian Railway and Marine World, is quartered in the Aldershot district with two companies of the Royal Engineers.

**The Grand Trunk Pacific Ry.** started on July 22 to burn fuel oil on its locomotives between Jasper and Prince Rupert, B.C., 719 miles. A fully illustrated description of these locomotives and of the oil storage tanks, etc., was published in the Canadian Railway and Marine World for May.



## The Western Passenger Rate Question.

The Interstate Commerce Commission, by Examiner Thurtell, opened an inquiry at Chicago, Ill., July 6, into the application of 15 Western railways for authority to increase passenger rates. The companies expect to be able to show by the evidence that the net operating income of the lines involved during the past seven years has been materially less than in the preceding seven. During the same period there has been an increase in the volume of business done, and in the amount of money invested in the undertaking. This results in a higher operating rate and naturally a lesser rate of return than has been maintained heretofore. The expenses of the companies have also been increased through the higher cost of labor and increased taxes. It is claimed, and evidence is being put in to show, that notwithstanding the economies effected, the increased volume of business has not been sufficient to meet the increased cost of operation, and that the present return upon the capital devoted to passenger service is less than 3%. The hearing will occupy some time, and it is not expected that there will be any finding for some months.

**The Public Service Corporation of Quebec** has been incorporated under the Quebec Companies' Act, with an authorized capital of \$3,000,000, to sell electric power in the City of Quebec, and surrounding area. The provisional directors include H. Murray, J. C. Smith, T. McDougall of the Shawinigan Water and Power Co., and M. L. Hersey, Montreal. It is reported that one of the objects of the company is to take over the Dorchester Electric Co.'s plant and franchise, which were sold by auction, June 30, in liquidation proceedings instituted by the Royal Trust Co. The purchaser was C. H. Brauchaud, Montreal, President of a committee of shareholders, the purchase price being \$100,000. It is said that the Shawinigan Water and Power Co. holds a majority of the Dorchester Electric bonds, and that the reorganization is to take place under its auspices. The S. W. and P. Co. has offered to its shareholders \$1,237,500 of new common stock, at par on the basis of one share of new stock to every 10 of the outstanding registered holdings at the close of business July 10, the right to subscribe expiring Aug. 30. The S. W. and P. Co. is building an electric railway at Three Rivers, Que., under the Three Rivers Traction Co.'s charter.

**A Canadian Northern Pacific Ry. Contract Suit.**—Proceedings were started in a British Columbia court, July 15, by Palmer Brothers and Henning, contractors, against the Northern Construction Co., the Cowan Construction Co., Mackenzie, Mann and Co., the Canadian Northern Pacific Ry., the National Trust Co., and the British Empire Trust Co., in an action to recover \$393,197 for work done. The two trust companies are made parties to the action as trustees for the bondholders, and it is sought to have the claim dealt with as a mechanic's lien and to have a declaration made that it takes precedence of the mortgage. The contractors carried out three subcontracts covering 53 miles of line, all of which appears to have been heavy work as the amount of the contracts worked out at: mileage 49 to 74.6, \$743,714; mileage 27 to 35, \$463,714, and mileage 405 to 424.50, \$1,008,276. There remained a balance outstanding of \$393,197 which it is now sought to recover.

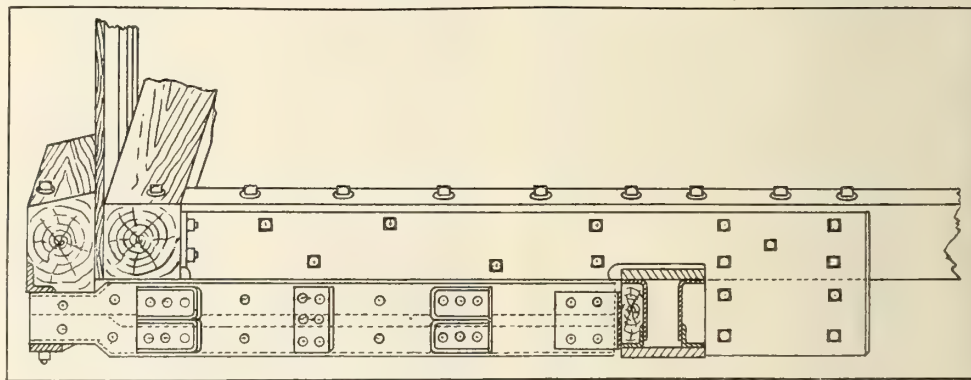
**Shrinkage allowance in drop forging dies** usually amounts to 3-16 in. to the foot, but the practice varies.

## Reinforcing Wooden Frame Freight Cars on Intercolonial Railway.

By G. E. Smart, General Master Car Builder, Moncton, N. B.

Material is being arranged for reinforcing the first 500 freight cars. Three sample cars have been fitted up at Moncton shops with metal plates pressed so that the upper part can be bolted to the side of the centre sill and extend back 2 ft. behind the body bolster and notched out so that the buffing and pulling strains are distributed to the body bolster as well as to the centre sills. The lower portion forms the draught arm and is reinforced with angle irons on the outside and pressed steel plates rivetted on the inside to form the lugs for the draught gear. The draught arms are made 2 ins. longer than the present wood draught timber which permits more room between the cars and will provide more clearance between the end ladder or any other part of the end of the cars than the Board of Railway Commissioners or the Interstate Commerce Commission call for. All parts of this draught arm can be manufactured from plates, angles and material of standard sizes and shapes that can be manufactured in Canada.

The manner of application is as follows: The old wood draught timber and body bolster are removed, and serviceable ma-



Steel Reinforcing Member for Wooden Frame Freight Cars, Intercolonial Ry.

terial, such as couplers, springs, followers and bolts are utilized on the new metal draught arm to reduce the cost, as it is intended that all cars in the 17,000, 18,000, 19,000, 20,000 and 21,000 series will be equipped with the standard double springs 6½ x 8, using the 24 in. twin spring, and cars in the 60,000 and 80,000 series of numbers will be equipped with the double class G springs 8 x 8 and the large double pockets. It also has been arranged that the same draught timber bolts will be utilized in bolting the arms to the centre sills and in addition 11¼ in. bolts and two 1 in. bolts through the end sills for each draught arm, making a total of 48 bolts per car, or 72 bolts as against 24 formerly, and the additional strength from the plates notched out the full depth of the bolster and also the front end angle so as to butt up against the sill.

It is also intended to dispense with the wooden deadwood between cars and substitute a cast steel one in place of same, which will permit the two centre truss rods to pass through without lengthening the rods. At through the end sills of the deadwood at through the end sills of the dead wood at each end and by allowing them to pass through this steel deadwood block it will strengthen the end sill and stiffen up the draught gear by the weight of the car pulling on the point where the draught gear is pulling out against the end sill.—Can. Gov. Ry.'s Employees' Magazine.

## Great Northern Railway Lines in Canada.

**Vancouver Terminals.**—Under the original order the company was to complete the extension of its station on the False Creek property, Vancouver, at the corner of Prior St. and Park Lane by March, 1916. The company failed to file plans for the building and there were negotiations for a two years' extension on the part of the company, while the city proposed appealing to the Board of Railway Commissioners for an order compelling the immediate filing of plans. Ultimately the matter came before the Board upon an application of the company for a change of location of the station. The city did not offer any serious objection to the change, which would bring it alongside the proposed Canadian Northern Ry. station, so long as steps were being taken to go ahead with the building. In the evidence given it was stated that the company had about 800,000 cubic yards of filling yet to do on its portion of the flats which were being reclaimed. The order of the Board approves of the new location; directs the submission of preliminary sketches of the layout of the station and tracks at once; the filing of complete plans to follow in order; the letting of contracts for the building within six months from the date of order, and the completion of the whole work by June 1, 1917. The filling

work is to be expedited in order that these directions may be carried out

**The Canadian Society of Civil Engineers** has arranged for an excursion to the Pacific Coast, to leave Montreal about Sept. 15, going by special train over the Grand Trunk, Timiskaming and Northern Ontario, National Transcontinental and Grand Trunk Pacific Railways to Prince Rupert, B. C., thence by steamship to Victoria, where three days will be spent. One or more days will be spent in Vancouver, and the return trip will be made over the C. P. R. from there. Short stops will be made at Winnipeg and Edmonton on the westbound journey, and at Calgary on the return journey. At Victoria there will be a garden party at Government House, motor drives, a dinner and one or two meetings.

**Wentworth St. Incline Ry., Hamilton.**—Plans for the extension of the Wentworth St. Incline Ry. in Hamilton, Ont., under the G. T. R. tracks, and to the level of the Toronto, Hamilton and Buffalo Ry. tracks, were before the Board of Control recently. It was recommended that the City approve of the plans, and take steps in conjunction with G. F. Webb, owner of the incline railway, to have the same approved by the Ontario Railway and Municipal Board, and the Board of Railway Commissioners, leaving it to the latter to apportion the cost of the improvement. (April, pg. 148.)



# Canadian Railway AND Marine World

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ADVERTISING COPY must reach the pub-  
lishers by the 10th of the month preceding the  
date of publication.

TORONTO, CANADA, AUGUST, 1915.

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## The Late Sir Sandford Fleming.

Sir Sandford Fleming, K.C.M.G., died at his summer home at Halifax, N.S., July 22, after a short illness. He was born at Kirkcaldy, Fifeshire, Scotland, Jan. 7, 1827, and was educated in Scotland, where he studied surveying and engineering. He came to Canada in 1845, and later joined the engineering staff of the Northern Ry., Toronto, of which he was appointed Chief Engineer in 1857. He subsequently engaged in private practice as a member of the firm of Fleming, Ridout and Schreiber. In 1863 he was chosen by the people of the Red River settlement, now incorporated in the Province of Manitoba, to proceed to England to urge the Imperial authorities to open railway communication between Red River and eastern Canada. On his return, he was appointed by the Governments of Canada, Nova Scotia and New Brunswick, in conjunction with the British Government, to conduct a survey for the first link of a railway to extend from the Atlantic to the Pacific, on British territory. Of a section of this railway, the Intercolonial, he was Chief Engineer during location and construction. In the meantime, in 1871, he was appointed Engineer in Chief to carry on the surveys for the Canadian Pacific Railway. In 1872 he headed an expedition which proceeded through the Rocky Mountains by the Yellowhead Pass. While engaged on the Intercolonial Ry., and in the exploring operations for the Canadian Pacific Railway, between Ottawa and British Columbia, he carried on, at his own expense, an examination of Newfoundland, to ascertain the possibility of establishing a railway service across the island. After the engineer engaged by him reported satisfactorily, he was thanked by the House of Assembly, and charged by the local government to conduct a railway survey from St. John's to St. George's Bay. The outcome of that survey is the road now built and operated by the Reid Newfoundland Co. In 1880 he retired from the Dominion Government service, at which date the transcontinental surveys had established the practicability of the proposed railway to the Pacific and the means of overcoming the formidable barriers. Construction was then being proceeded with at both ends, and between Lake Superior and Manitoba, in all over 2,000 miles, some 600 miles of which was practically completed.

After his retirement from Government service, he devoted himself to special branches of science and literature, and in lending his assistance to the Government in an advisory capacity in various departments of public service. In 1883, when in England on a visit, he was asked by cable to assist in the establishment of the Canadian Pacific Ry. by its present route through the Rocky Mountains, and he immediately returned to Canada for that purpose, and made the first through journey from ocean to ocean, in advance of the rails, his experiences being embodied in a book entitled "From Old to New Westminster." He gave considerable time and study to the question of universal time, his efforts having contributed in no small degree to the adoption of an initial meridian common to all nations. He also studied and made a specialty of an all British cable service, of which the Pacific cable is the first section. In 1879 he submitted to the Canadian Government a scheme for spanning the Pacific Ocean by electric cable, which, in connection with the overland telegraph would complete the electric girdle of the globe, and bring Great Britain, Canada, Australia, New Zealand, India and South Africa into unbroken telegraph touch of each other without passing over foreign soil, and since that

date he has consistently advocated the establishment of such a work. He contributed a number of papers to various scientific and political societies, and wrote several books dealing with his unique experiences in railway location and construction in Canada, which stand as authorities on all points, geographical, geological and engineering. In recognition of his services he was created a Companion of the Order of St. Michael and St. George in 1877, and a Knight Commander of the same order in 1897, and at different times has been presented to the present and the two previous monarchs. He was elected an honorary member of the Canadian Society of Civil Engineers in 1908, and was also a member of the Institute of Civil Engineers, England, and of the American Society of Civil Engineers, a Fellow and Past President of the Royal Canadian Society, Canadian Landmarks Association, Royal Conservation Commission, director Hudson's Bay Co., director C.P.R., Honorary President Canada Cement Co., Fellow of the Geological Society of the Victoria Institute, Royal Historical Society, Royal Geographical Society, and numerous other business, philosophical and social organizations. He has been variously spoken of as one of the most public spirited Britons the Empire ever produced, and as one who could look back upon a life of great and varied usefulness. The funeral, which took place at Ottawa, July 24, was largely attended by representatives of organizations with which he had been connected and by the general public.

**The Pennsylvania Rd. test department,** which was opened in 1874 in a small way, has since made as many as 120,000 tests in one year, at a cost of about 0.6% of the material purchased by the railway.

**Locomotives overhauled for the first time** are said to be in better condition than when first received, as any weak points that have been developed are often changed at that time.

**The Canadian Ticket Agents Association's** 29th annual gathering will be held at Denver, Col., October 18 to 21, both inclusive, the date having been changed so as not to conflict with the Travelling Passenger Agents Association's meeting in Boston.

**The Canadian Northern Ry.** has again operated in Alberta this year, at its own expense, under the Provincial Agriculture Department's auspices, a special agricultural demonstration train. Reduced rates are given from all stations within twenty-five miles of the points at which the train stops for lecture purposes.

**The Marine Department** has issued a notice to all mariners advising as to the necessity of keeping a sharp lookout and reporting any suspicious craft which they may sight. Small fishing and coasting vessels are particularly urged to report any such craft to the nearest customs officer for transmission by telegraph on the east coast to the Captain in charge at the Halifax dock yard and on the west coast to the Superintendent of the Esquimalt dock yard. Definite facts only are to be reported, and not hearsay evidence.

## SITUATION VACANT.

Situation for experienced electrician as Foreman and Assistant Superintendent of Light, Power, Telephone and Railway lines; construction, installation, maintenance in each department. State experience, references, salary expected, and when services available. Secretary, Public Utilities Commission, City of Port Arthur.



## Transportation Appointments Throughout Canada.

The information under this head, which is derived entirely from official sources, is given with the greatest care, so as to ensure absolute accuracy. Anyone who may have any error in our announcements will confer a favor by advising us.

**Canadian Government Railways.**—B. A. BOURQUE has been appointed Assistant to the Comptroller and Treasurer. Office, Moncton, N.B.

F. W. WHELPLEY is reported to have been appointed Assistant to the Treasurer. Office, Moncton, N.B.

**Canadian Northern Ry.**—E. D. TOYE, Division Storekeeper, Ontario Grand Division, has had his office moved from Toronto to Trenton.

A. W. MARTIN has been appointed City Ticket Agent, Port Arthur, Ont., vice J. R. McDonald, deceased.

C. D. FRENCH is reported to have been appointed storekeeper, Humboldt, Sask., vice S. K. Moorcroft, promoted.

**Canadian Pacific Ry.**—A. C. DOUGLAS, Purchasing Agent, Vancouver, has been transferred to Montreal temporarily to discharge the duties of Assistant General Purchasing Agent, while E. Fitzgerald is assigned to British War Office Service for the purchase of supplies.

L. A. CLEARY has been appointed General Foreman with supervision over the back shop and roundhouse, McAdam, N. B., vice W. Wells, transferred.

W. H. FLETCHER has been appointed District Master Mechanic, District 1, Lake Superior Division, C.P.R., vice L. G. Roblin, resigned to enter Canadian Government Railways service. Office, North Bay, Ont.

J. WEEGAR, heretofore Travelling Freight Agent, Eastern Manitoba, Winnipeg, has been appointed District Freight Agent, Fort William, Ont., vice G. Hiam, who has volunteered for active service in Europe.

W. A. LOWE has been appointed Travelling Freight Agent, Manitoba Division, with territory covering main line and branches, Neebing to Ninga, Banting, Douglas, Moorepark and Harrowby inclusive, vice J. J. Weegar, promoted. Office, Winnipeg.

J. F. EARL has been appointed Roadmaster, Emerson and La Riviere Subdivisions, Winnipeg, Man., vice J. F. Larson, appointed section foreman, Winnipeg-Terminals.

A. DESHARNAIS has been appointed Roadmaster, Coutts, Cardston and Stirling subdivisions, not A. Deharnais as stated in our July issue. His office is at Lethbridge, Alta., not Langton as stated in our July issue.

JOHN McRAE, heretofore Shop Foreman, Kamloops, B.C., has been appointed Locomotive Foreman, North Bend, B.C., vice C. Brown, who has left the service. The position of Shop Foreman at Kamloops, we are advised, will not be filled at present.

**Central Vermont Ry.**—The handling of freight claims has been transferred from the Freight Department, and fire, damage and injury claims from the Legal Department, to the Auditing Department.

S. S. RUSSELL, heretofore Special Agent, has been appointed Claims Agent, and all correspondence in regard to loss, damage and overcharge claims, claims for fire, damage and injury are addressed to him. Office, St. Albans, Vt.

**Dominion Atlantic Ry.**—D. J. MURPHY, Sr., Roadmaster, will have charge of bridges and buildings, vice H. Bailey, whose services were secured during the erection of a number of large steel bridges, which is now completed, and who has left the service. Office, Kentville, N.S.

**Edmonton, Dunvegan and British Columbia Ry.**—Following are the officials of this

company,—President, J. D. McArthur, Winnipeg; Secretary-Treasurer, J. K. McLennan, Edmonton, Alta.; Assistant Secretary-Treasurer, D. W. Campbell, Winnipeg; General Manager and Chief Engineer, W. R. Smith; Traffic Manager and Purchasing Agent, A. Campbell; Superintendent, R. M. Halpenny; Master Mechanic, R. Weit, and Accountant, D. A. Pennicuik, Edmonton, Alta.

**Grand Trunk Pacific Ry.**—G. E. DECKER has been appointed Car Foreman, Repair Yard, Transcona, Man., vice J. Reeves, assigned to inspector.

H. G. PEPPER, formerly Manager, Majestic Hotel, New York, has been appointed Manager, The Fort Garry, G.T.P.R., Winnipeg.

H. R. SIMPSON, heretofore Road Foreman, Jasper, Alta., has been appointed General Locomotive Foreman, with jurisdiction from west switch at Watrous to Winnipeg, including intervening branch lines, reporting to H. McCall, Superintendent.

J. ABBOTT, heretofore Chief Dispatcher, Regina, Sask., has been appointed Chief Dispatcher, Melville, Sask., vice M. D. Thompson, assigned to other duties, and his former position has been abolished.

W. G. McCONACHIE, heretofore Road Foreman, Edmonton, Alta., has been appointed General Locomotive Foreman, with jurisdiction from west junction switch, Edmonton, to the west switch at Watrous, including intervening branch lines, reporting to N. B. Walton, Superintendent.

G. H. LAYCOCK, heretofore Locomotive Foreman, Endako, B.C., has been appointed Locomotive Foreman, Jasper, Alta., vice D. W. Hay, transferred.

J. A. MILLER has been appointed Locomotive Foreman, Endako, B.C., vice G. H. Laycock, transferred.

A. H. MAHAN, heretofore Locomotive Foreman, Prince George, B.C., has been appointed General Locomotive Foreman, with jurisdiction from Prince George to west switch, Edmonton, including intervening branch lines, reporting to J. P. Kirkpatrick, Superintendent.

D. W. HAY, heretofore Locomotive Foreman, Jasper, Alta., has been appointed Locomotive Foreman, Prince George, B.C., vice A. H. Mahan, promoted.

A. WATT, heretofore General Foreman, Prince Rupert, B.C., has been appointed General Locomotive Foreman with jurisdiction over territory from Prince Rupert to west switch, Prince George, B.C., reporting to J. H. Todd, Superintendent.

W. G. CONNOLLY, heretofore in the city ticket office, Vancouver, B.C., has been appointed City Passenger and Ticket Agent there, as reported in our last issue.

The following station agents have been appointed,—Elie, Man., A. Fullum; Landis, Sask., A. Lerner; Lebert, Sask., F. X. Landry; Battleford, Sask., R. L. Harrop; Edgerton, Alta., F. H. Keefe; Trichu, Alta., H. B. Briggs; Beiseker, Alta., H. E. Frank.

**Grand Trunk Ry.**—W. H. ARCHER has been appointed Locomotive Foreman, Palmerston, Ont., vice J. A. Walton, transferred.

The following station agents have been appointed,—Admaston, Ont., (passenger), A. A. McIntyre; Suspension Bridge, N.Y., (passenger), C. P. Brohmann; outside agency, Windsor Hotel, Montreal, A. M. Robert.

G. H. BROWN, heretofore Soliciting Freight Agent, Chicago, Ill., has been appointed Commercial Agent, Omaha, Neb., vice J. Waugh, transferred.

J. WAUGH, heretofore Commercial Agent, Omaha, Neb., has been appointed Commercial Agent, San Francisco, Cal., vice F. H. Lord, resigned.

**Inverness Railway & Coal Co.**—J. McGILLIVRAY, heretofore General Manager, has been appointed Receiver and Manager by a Nova Scotia court, on the application for the trustees for the bondholders, the interest on the bonds being in default.

**Lehigh Valley Rd.**—G. H. LEE, heretofore General Passenger Agent, District 3, Chicago, Rock Island and Pacific Ry., St. Louis, Mo., has been appointed General Passenger Agent, L.V.R., vice G. W. Hay, resigned. He reports to the General Traffic Manager. Office, New York.

**London and Port Stanley Ry.**—W. GUY, whose appointment as Traffic Manager, was announced in our last issue, has resigned for personal reasons, and has returned to Pere Marquette Rd. service.

J. J. CALLAGHAN, Superintendent of Transportation, Montreal and Southern Counties Ry., Montreal, has been appointed Manager of Operation, L. & P. S.R., with office at London, Ont.

F. T. LEVERSUCH, heretofore Freight and Ticket Agent, Michigan Central Ry., Windsor, Ont., has been appointed Traffic Manager, L. & P.S.R. Office, London, Ont.

**Michigan Central Rd.**—T. EVANS, heretofore Local Freight Agent, London, Ont., has been appointed General Agent there, representing both freight and passenger departments.

**National Transcontinental Ry.**—The Dominion Government having assumed the operation of the National Transcontinental Ry. and the Lake Superior Branch of the Grand Trunk Pacific Ry. between Fort William, Ont., and Winnipeg, Man., the following officers of the G.T.P.R., will, until otherwise announced, also represent, in their respective capacities, the Canadian Government Railways, with jurisdiction over the line between Fort William and Winnipeg,—A. E. Rosevear, General Freight Agent; F. R. Porter, Assistant General Freight Agent; F. G. Adams, Division Freight Agent; W. E. Duperow, Assistant General Passenger Agent; W. J. Quinlan, District Passenger Agent; T. E. P. Pringle, City Passenger Agent, and E. McDonald, District Baggage Agent, all with offices at Winnipeg.

C. E. Brooks, acting Superintendent of Motive Power, G. T. Pacific Ry., Transcona, Man., has issued a notice, as follows,—“Commencing July 1 the Dominion Government has taken over the operation of the Transcona roundhouse and roundhouses, shops, and work pertaining to this department, between Winnipeg and Westfort, Ont. The supervision of all employees engaged on this section of the road will be in the hands of the G.T.P.R. officials until such time as the Dominion Government appoints its own staff, or takes over the present staff.”

**Wabash Rd.**—L. J. FERRITOR, formerly Superintendent, Chicago and Alton Rd., has been appointed personal representative of E. F. Kearney, President, Wabash Rd., in charge of affairs in Canada. Office, Buffalo, N.Y.

S. E. COTTER, heretofore General Superintendent, St. Louis, Mo., has been appointed General Manager for the Receivers, in charge of operation and maintenance. Office, St. Louis, Mo.

R. H. HOWARD has been appointed Chief Engineer Maintenance of Way, in charge of the Maintenance of Way and Signal Departments, and Superintendents and Signal Engineers will report to him. Office, St. Louis, Mo.

The best results in locomotive operation will, it is claimed, be obtained when there are enough travelling engineers to make it possible for them to ride at least once a month on every locomotive under their surveillance.



## Canadian Northern Railway Construction, Betterments, Etc.

**Canadian Northern Ry.**—The question of the link in Port Arthur, Ont., to connect the C.N. Ontario Ry. from eastern points, with the C.N.R. to Winnipeg and the west, was under discussion between representatives of the company and the City Council July 9.

M. H. MacLeod, General Manager, is reported to have stated that there are a number of gangs working on the lines west of Winnipeg improving the roadbed and in general fixing up work. There is a little construction work being done. Twelve cars of steel have been delivered in the Saskatoon yards for the Elrose line, on which it is expected to lay 35 miles of track this year.

A number of cargoes of steel rails are reported to be due at Port Arthur for transfer to western points.

The Saskatchewan Legislature has passed an act extending the time until Dec. 31, 1916, and authorizing the Lieutenant Governor to grant further extensions as required, "but for no longer period than one year," for the building of all the branch lines agreed to be built under guarantee of bonds by the province.

Replying to questions in the Saskatchewan Legislature recently, the Minister of Railways said the Government was pressing on the company the necessity of completing its Radville-Moose Jaw line near the latter city, and hoped that the work would be completed so as to allow farmers to make use of the terminal elevator there this season.

The Board of Railway Commissioners has authorized the opening for traffic of the line from Melfort, southerly to St. Brieux, Sask., 22 miles.

M. H. MacLeod, General Manager, arrived in Edmonton, July 14, on the return to Winnipeg after a trip of inspection of the whole line. He is reported to have during his trip made an inspection of the country between Battleford, Sask., and Oliver, Alberta, with a view of deciding on a general location for the balance of which is at present called the Oliver-St. Paul line. Considerable progress is reported to have been made with the grading on the 40 mile section for which D. F. McArthur has the contract. It is reported that the remainder of the distance to St. Paul will be put under contract this year.

The line to the Grand Prairie country branches off from the transcontinental line at Onoway, and the railhead is at present at Sangudo on the Pembina River, 65 miles from Edmonton. A bi-weekly service is being given. Grading is completed from the Pembina to the McLeod River, and it is expected to lay the steel on this section during this year. The location of the extension from the McLeod River crosses the Athabasca River at Chaissons Crossing, and then runs west by north to the Little and Big Smoky Rivers, and on to the Grand Prairie country.

It is reported that grading is being proceeded with on the line from Calgary to MacLeod, in Southern Alberta, and that it is expected the line will be ready for track-laying by the end of the year.

**Canadian Northern Pacific Ry.**—Sir William Mackenzie, President, is reported to have said in an interview in Toronto, June 30, that satisfactory work is being made with the work of providing the necessary station and terminal facilities on the line in British Columbia, and that it is expected that by the autumn conditions will allow of the inauguration of a train service of a permanent character. The line, he is reported to have added, has cost on the average more than twice the amount of the

bonds guaranteed by British Columbia. In the building of railways it is necessary to organize subsidiary companies in order to more expeditiously carry on certain portions of the work. On completion of the contracts the various properties are handed over to the parent company. All the terminals and bridges on the line are owned by the C.N.P. Ry. A part of the company's terminal work has already been provided, but the major portion of the guaranteed terminal funds remain intact, and will not be used until circumstances for more rapid construction are favorable and the need of the facilities is more acute.

It was reported June 30, that with the exception of strips, aggregating 75 miles, on which some ballasting had to be done, the line was practically completed. The unfinished sections include 35 miles between Lytton and Kamloops, and 40 miles between mileage 110 and Albreda Summit.

Work is reported to be in progress on the station buildings at Langley, Matsqui, Rosedale and Lytton, and preparations are being made for starting work on the locomotive houses at Boston Bar and Kamloops. These are the first two divisional points east of Port Mann, the other divisional points on the line are at Blue River and Lucerne, the latter being five miles west of the Yellowhead Pass. R. W. Graham is reported to be in charge of the building work. (July, pg. 259.)

## British War Office Purchases in Canada.

Since early in April a specially organized division of the C.P.R. General Purchasing Department has been handling British War Office purchases in Canada for practically all lines of goods required except explosives, shells and parts thereof, forage, and fodder. Since the return of Sir Thos. G. Shaughnessy, President of the C.P.R., from England recently, the purchasing operations have been extended considerably, and he has placed in charge of them E. Fitzgerald, Assistant General Purchasing Agent, C.P.R., who has established himself in room 114, on the lower floor of the Windsor St. station, Montreal, where he has a large space. He has manned his staff exclusively from the C.P.R. General Purchasing Department, one of the best organized on the whole American continent; and an organization has been perfected which would not have been possible otherwise. Practically all purchases are being made direct from the manufacturer or producer, and the best prices possible are therefore being obtained without the intervention of middlemen. The purchasing is to be carried on entirely independent of the C.P.R. All orders are given on War Office Service, and payments are made through the Bank of Montreal.

**Calgary Municipal Ry.'s Record.**—Calgary, Alta., press dispatch, July 6: "The municipal street railway system completed six years of service yesterday. It commenced business six years ago with one mile of track and two cars. The system has grown in that time to 71 miles of track and 90 cars, representing the investment of \$2,500,000. It has increased the employees from 12 to 275. The system has set aside profits for contingencies averaging \$55,000 a year."

**Toronto Suburban Ry.**—It is said that the Hydro Electric Power Commission of Ontario, in addition to negotiating for the purchase of the Chatham, Wallaceburg & Lake Erie Ry., as referred to on another page, is also trying to secure the Toronto Suburban Railway's nearly completed line from Toronto to Guelph, another Mackenzie-Mann enterprise, and to include the same in the Ontario hydro electric railway system.

## Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those for 1913-14, from July 1, 1914:

	Gross Earnings	Expenses	Net Earnings	Increase or Decrease
July	\$1,504,300	\$1,163,800	\$340,500	x \$83,800
Aug.	1,367,700	1,123,000	244,700	x 163,900
Sept.	2,109,900	1,519,000	590,700	65,800
Oct.	1,895,300	1,332,100	563,200	x440,900
Nov.	1,670,200	1,123,100	547,100	x177,000
Dec.	1,329,100	908,000	423,100	200,900
Jan.	950,800	773,000	177,800	x175,100
Feb.	1,105,100	823,700	281,400	42,800
Mar.	1,379,000	956,000	423,000	62,600
Apr.	1,429,000	940,000	489,000	74,800
May	1,193,900	871,000	322,900	x158,700
	\$16,024,300	\$11,530,900	\$4,493,400	x\$1,395,000

Decr. \$4,573,400 \$3,337,100 \$1,236,300 .....  
x Decrease.

Approximate earnings for June, \$1,201,300, against \$1,655,300 for June, 1914, and for two weeks ended July 14, \$537,900, against \$737,000 for same period 1914.

## Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1913-14, from July 1, 1914:

	Gross Earnings	Expenses	Net Earnings	Increase or Decrease
July	\$10,481,971.72	\$6,703,525.89	\$3,778,445.83	\$383,347.35
Aug.	8,917,764.38	6,554,606.68	2,363,157.70	597,981.54
Sept.	10,754,139.67	6,387,091.28	4,367,048.39	45,530.30
Oct.	9,282,923.49	5,361,600.13	3,921,323.36	2,281,529.43
Nov.	8,057,358.89	5,413,286.72	2,644,072.17	2,244,173.89
Dec.	7,443,962.43	5,244,438.62	2,199,523.81	2,027,297.90
Jan.	6,109,026.94	4,968,793.64	1,140,233.30	140,059.24
Feb.	6,735,678.49	4,756,663.87	1,979,014.62	507,438.16
Mar.	7,852,989.67	4,879,974.94	2,973,014.73	x126,224.14
Apr.	7,455,859.54	4,768,104.33	2,687,755.21	657,109.81
May	7,261,495.63	4,818,493.44	2,443,002.19	x520,009.52

\$91,353,175.85 \$60,256,579.54 \$30,896,596.31 x\$8,193,706.47  
Dec. \$28,407,226.92 \$20,213,520.45 \$8,193,706.47 .....

xDecrease.  
Approximate earnings during June, \$6,990,000, against \$9,561,000 for June, 1914. During June the mileage was increased to 12,921.

Approximate earnings for two weeks ended July 14, \$3,301,000, against \$4,628,000 for same period 1914.

## Grand Trunk Railway Earnings, Etc.

The following figures show the earnings for the G.T.R. (including the Canada Atlantic Ry.), the G.T.W.R. and the D.G.H. & M.R. for May:

Grand Trunk Railway.	
Earnings	\$3,234,900
Expenses	2,183,900
Net earnings	\$1,051,000
Grand Trunk Western Railway.	
Earnings	\$576,400
Expenses	570,400
Net earnings	\$6,000
Detroit, Grand Haven and Milwaukee Ry.	
Earnings	\$204,000
Expenses	239,700
Deficit	\$35,700

Approximate earnings for June, \$4,403,613, against \$4,543,686 for June, 1914, and for two weeks ended July 14, \$1,979,907, against \$2,120,878 for same period 1914.

## TRAFFIC RECEIPTS OF THE SYSTEM.

Aggregate from Jan. 1 to June 30:

	1915	1914	Incr.	Decr.
G.T.R.	\$18,507,573	\$20,349,529	.....	\$1,841,956
G.T.W.R.	3,470,230	3,453,633	\$25,597	.....
D.G.H.&M.R.	1,203,805	1,177,702	26,103	.....
Totals	\$23,181,608	\$24,980,864	.....	1,799,256

## Grand Trunk Pacific Railway Earnings.

The approximate earnings of the Prairie Section and Lake Superior Branch, 1,104 miles, for June, were \$270,241, against \$427,103 for June, 1914. Aggregate earnings from Jan. 1 to June 30, \$1,701,938, against \$2,482,511 for same period 1914.

An arrangement is reported to have been completed under which practically the whole of the product of the U. S. fisheries in Alaska waters will be sent over the Grand Trunk Pacific Ry. from Prince Rupert, B.C.



## Railway Finance, Meetings, Etc.

**Grand Trunk Western Ry.**—The Michigan Railway Commission has authorized this company, which is the G.T.R. organization east of the St. Clair River, to issue bonds for \$5,000,000 to cover expenditures amounting to \$5,000,000 for betterments already made and rolling stock purchased.

**Pere Marquette Rd.**—The junior bondholders are reported to have put in a claim for the Lake Erie and Detroit River Ry., which is the Canadian portion of the company's system, on the ground that it is not included in the mortgaged property. It is expected that the courts will, at an early date, order a sale of the property.

**Inverness Ry. & Coal Co.**—At Halifax, July 6, on the application of the National Trust Co. of Toronto, trustee for the holders of \$3,000,000 I. R. & C. Co.'s bonds, interest of which is in default, J. McGillivray, General Manager of the company, was appointed by the court as Receiver and Manager, with authority to receive amounts owing to the company and to carry on the work for the present.

**Pere Marquette Rd.**—A decree for the sale of the Pere Marquette Rd. was signed by Judge Tuttle at Detroit, Mich., July 22, and the date for the sale fixed as Nov. 15. The reserve price is stated to be \$41,000,000, and a combination of underlying bond and consolidated mortgage holders will, it is said, buy in the road. The actual price to be paid in is \$12,000,000, the amount owing to the court.

**White Pass and Yukon Route.**—Gross earnings from Jan. 1 to May 31, \$139,062 against \$176,254 for same period 1914.

## Grand Trunk Railway Betterments, Construction, Etc.

**Alexander, Ont.**—The G.T.R. station and restaurant at Alexandria, Ont., were destroyed by fire July 14, by sparks from a locomotive. The buildings were of frame and were erected over 30 years ago. The erection of a new station, which has been talked of for some time, will now be taken in hand immediately.

**Brantford, Ont.**—H. E. Whittenburger, General Superintendent, had an interview recently with representatives of the city council respecting sidings and other matters, including the betterment of the freight service at Paris.

**Port Huron, Mich.**—The G.T.R. freight sheds along the St. Clair River, Port Huron, Mich., were destroyed by fire, July 6. The total loss, including 22 freight cars, and freight in store and transit is placed at \$300,000. (July, pg. 257.)

## The Canadian Autobus Company and Its Montreal Franchise.

The city legal department advised the Montreal Board of Control July 9, "that the city cannot, in virtue of the powers it possesses, guarantee the Canadian Autobus Co.'s obligations. The opinion went on to state that to give the guarantee "it would be necessary to obtain the authorization of the Legislature," and that after deciding to give the guarantee "this decision could only become operative when it had been ratified by the Legislature." The department further reminds the Board "that the case concerning the annulment of the bylaw and of the contract between the city and the company is at present before the Supreme Court."

## The Jitney Situation in Canada.

There are signs all over Canada that the popularity of the jitney is waning, and that even with moderate regulations, jitneys cannot be profitably operated. Outside the larger cities where there are electric railways, there have been few attempts to operate jitneys, and these have been mainly to meet temporary conditions.

The jitney has practically disappeared from Montreal, one of the city papers stating July 9: "Search as you may one cannot be found." The management of the Montreal Jitney Association refused to make any statement on the matter, but the newspaper referred to stated that the cause for its disappearance was that the car owners, after a few days running on a route, "discovered" that they owned the car, and that as soon as a party of tourists came along they were ready to take them anywhere, and the schedule on the routes went all to pieces. An attempt was made to patch up a truce, but the new arrangement only lasted for a day or two, and now everything is apparently at an end.

The jitney situation in Toronto is constantly changing so far as the men engaged in the business are concerned. One statement made is that few men are making anything out of it, and that a considerable number are losing. The wear and tear on cars is reported to be heavy, and owners of single cars get out of the business as soon as they find that there is not "large" money in it. The total number of jitneys in the business is about the same, but they are running on a larger number of routes, and there is not the congestion of traffic on Yonge St. and other central routes that prevailed in June. The city bylaw as to the traffic was finally passed, with the section fixing the license fee at \$1 per seat a year. The Toronto Jitney Association has taken out a bond of \$10,000 for insurance against accident, in place of the \$1,000 for each car called for by the regulations. Under the bond the insurance company will pay up to \$1,500 for each person in an accident, but not more than \$10,000 for any one accident.

The Hamilton, Ont., City Council has finally passed a jitney bylaw. Under it the cars are described as "licensed omnibuses"; the license fee is fixed at \$2 a year for each seat, exclusive of the driver's seat; the cars must not be used in the owner's private business, or as taxicabs; and must be kept clean, dry and in good order; must be provided with safety appliances; they shall not be operated on Sundays, and while they are being operated the drivers must not smoke. Other regulations set out the procedure for the granting of licenses; a restriction of area within which the cars may not be stopped, etc. Counsel for the jitney owners is reported to have informed the police commissioners recently that the owners are having a mighty hard time of it. They are not making money hand over fist as many people believe, but on an average not more than \$7 a day is taken by each car. Out of this amount the driver must be paid and also the expense of operation and upkeep of the car. Some of the jitney owners say that the city should not ask more than 8% of the receipts, the same as the Hamilton St. Ry. pays, and puts forward as one reason for a percentage of receipts instead of an annual fee, that the jitney service at its best will only be an eight months one.

The Galt, Ont., Town Council passed a by-law, July 5, fixing a license fee of \$20 a year for carrying on the business of using autos for hire, with a charge of \$5 extra for a second or any further cars so used.

There has been a considerable diminution of the number of breaches of the traffic

bylaw in Winnipeg, owing to the vigilance of the police. One case in particular has attracted some attention. Two men were brought up charged with refusing to pay taxicab rates, the driver alleging that they had taken the car by the hour and that it was no longer a jitney. The magistrate refused to consider this claim, on the ground that the driver was licensed to run a jitney, and could not run it as a taxi, when he saw a chance of getting a higher rate from his customers.

One of the reasons which has prevented the rapid development of the jitney business in Saskatchewan has been the fact that the Legislature has increased the fees for autos from a registration fee of \$10 and an annual fee of \$3 for all types of car, to a registration fee of \$10 and an annual payment of \$10 for cars under 30 h.p., and a registration fee of \$15, and an annual payment of \$15 for cars over 30 h.p. There are about 10 cars in operation in Regina at a 5c. fare, but it is not thought that the competition with the municipally owned electric railway can be maintained for long at this fare. The Saskatoon City Council has framed a bylaw as to jitney traffic, which is waiting final action. The regulations are framed on the bylaws in operation elsewhere, but contains several special sections having for their object the protection of the interests of the municipal railway. These sections provide that jitneys shall not pick up traffic nearer than two blocks from the terminal points of the railway, and that no jitney shall run alongside the street car line on unpaved streets for more than one block. The owner of the first jitney in Saskatoon has gone out of business, and E. G. White, the man who is now running it, is reported to have said: "If the bylaw goes through in its present shape it will be absolutely out of the question for any jitney to attempt to make expenses." The Saskatoon Phoenix, in commenting on the bylaw, July 12, said: "The jitney as a commercial proposition is a failure in the west. Even now at rates which are equivalent to double that of the street car service, in the sense that for the same fare only one half of the distance is covered, the jitney is not profitable in the business sense of the word. . . . The jitney will doubtless disappear. . . . as the cars get worn out, for allowance for depreciation, wear and tear, does not figure in the jitney owner's bookkeeping. He gets wages out of his car and that is all; he is consuming his capital. . . . The amount which the jitney takes out of the street car revenue is a mere bagatelle."

The insurance companies in Vancouver have cancelled the joint car bond issued under the jitney bylaw, and the car owners now have to take out individual bonds. A number of drivers have been fined nominal sums for various breaches of the bylaws, and a warning was given that regulations would be rigidly enforced and the maximum penalties inflicted.

In Victoria, B.C., there is no civic regulation of the jitney traffic, the only regulation being the rules of the Victoria Jitney Association, which controls the business. The city council has been urged to adopt regulations, but has always refused, the third attempt to draw up a bylaw having been defeated June 29.

**London Train Service.**—It is announced that owing to the electrification of the London and Port Stanley Ry., operating between London and Port Stanley, Ont., the train service hitherto operated by the Michigan Central Rd. and Pere Marquette Rd.



# Electric Railway Department

## The Electric Railway Situation on North Yonge Street, Toronto.

Canadian Railway and Marine World for July contained full particulars of the Toronto and York Radial Ry.'s franchise expiring on Yonge St., south of Farnham Ave., Toronto, and of the city's action in removing the company's rails, overhead work, etc., from the street between Farnham Ave. and the southerly terminus at Shaftesbury Ave., although the Toronto Ry. Co. claimed to have bought that section of the line from its subsidiary company, the T. & Y. R. R. The Toronto Ry. then applied to the Ontario Railway and Municipal Board, the chairman of which, D. M. McIntyre, K.C., gave its decision July 5, as follows:

"This is an application by the Toronto Ry. Co., in which the City of Toronto is respondent. As originally launched, the application sought authority for that company to operate the track formerly owned by the Toronto & York Radial Ry. Co. on Yonge St., in the City of Toronto, extending approximately from Farnham Ave. to the C.P.R.—that track having been purchased as alleged by the applicant under an agreement of the sale dated June 25, 1915. The instrument of sale was not produced, but as counsel for the alleged vendor and purchaser respectively affirmed its existence, there seems to be no room for doubt on the point.

"At the hearing it appeared that the track in question had been torn up by the city after the application was launched, and its scope was extended to claim an order restraining the respondent, its servants, workmen and agents from interfering with the applicant in the operation of the said track, and a mandatory order requiring the respondent to replace all tracks torn up by it on the said road in a safe operating condition, and an order restraining the respondent, its servants, workmen, and agents from interfering with or preventing the applicant from replacing the said tracks if the respondent shall not immediately replace the same, and an order declaring that the applicant may replace the said tracks without prejudice to its remedy at law, and damages against the respondent for violation of its agreement.

"The facts out of which the application has arisen are not the subject of substantial controversy. At the time of the making of the contract between the city and the company in 1891, which was confirmed by legislation at the session of 1892, the Metropolitan St. Ry. Co., now the Toronto and York Radial Ry. Co., had an exclusive right to operate surface street railways over the portion of Yonge St. over which the track in question extends. This right was fixed to expire on June 25, 1915, and the agreement of the applicant with the city vested in the former the exclusive right to operate surface street railways over the portion of Yonge St., so far as the city could legally grant the same. This is construed by the applicant's counsel, and rightly the Board thinks, to confer now upon the applicant the exclusive right in possession and enjoyment to operate a surface street railway on that portion of Yonge St. As stated above, on June 25, 1915, and immediately before the expiry of the Toronto and York Radial Ry. Co.'s franchise in respect of that portion of Yonge St. the applicant purchased from the former company its track and overhead work on that portion of Yonge St., and this track the applicant claims the right to operate as a railway, in situ and,

in view of its removal by the city, the right to relay and thereafter operate it for the remainder of its franchise term.

"A preliminary objection was taken on behalf of the city to the Board's jurisdiction to entertain the application, and in a proper case to grant the relief sought. In view, however, of the ample powers conferred by the act constituting the Board (R.S.O. 1914, c. 186), and the Ontario Railway Act (R.S.O. 1914, c. 185)—and in particular sec. 21 of the former, and sec. 260 of the latter—the Board is of the opinion that its jurisdiction is clear and unmistakable.

"Upon the expiry of the Metropolitan Co.'s franchise, its rights to maintain its tracks and operate its cars upon that portion of Yonge St. ceased. The transaction of sale no doubt vested in the applicant the ownership of the rails and other material, the property of the vendor company, affixed to the street, but not without more, in the opinion of the Board, as a part of its railway, clothed with all the rights and immunities of its system throughout the city. The portion of Yonge St. referred to must be regarded as the proposed site of an extension of the applicant's railway. Now, where the applicant proposes to extend its railway within the area defined by its charter, its power to do so is conditioned on the observance of certain pre-requisites fixed in part by agreement between the parties, and in part by statute. For instance, clause 12 of the award, conditions, tender and bylaw, forming part of the agreement between the city and applicant declares that 'the location of the railway on any street shall not be made by the purchaser (the company), or confirmed by the city council until plans thereof showing the proposed position of the rails, the style of rail to be used, and the other works in each such street, have been submitted to and approved in writing by the City Engineer.' Again clause 15 of the award, conditions, tender and bylaw provides that 'no new lines shall be opened for traffic until the purchaser (the company) has obtained a certificate in writing from the City Engineer that the same has been constructed to his satisfaction.'

"It is true that in this case the railway is, or was when the application was launched, already constructed. But it was constructed under an agreement between the Metropolitan Co. and the city, or its predecessor, the County of York, and what is now sought to be done is to have it naturalized, and its existence in situ legalized and confirmed under an agreement between the applicant and the city. How this can be done without a compliance with the terms of the agreement, under which alone the applicant's railway can be lawfully located in this street, the Board is unable to conceive. Admittedly there has been no such compliance. Now that the track is as a structure non-existent, by reason of the action of the city, the obligation of the applicant to comply with these conditions precedent is certainly not relaxed.

"Again, clause 12 above cited, provides that 'the gauge of the system (4 ft. 11 in.) is to be maintained on main lines and extensions thereof and branch lines and extensions thereof.' It appears that the gauge of the track in question on Yonge St. is different from this defined gauge of the applicant's system and extensions thereof. The applicant's purpose is in effect to adopt this

track as an extension of its system, and this to be done legally must be done in conformity with this provision of the agreement, unless the city chooses to waive it.

"Under sec. 105 of 'The Ontario Railway Act,' the Board may, in the case of proved inadequacy of a railway company's tracks, order the company to make additions thereto, but it is expressly declared that such additions shall be subject to all the provisions of the agreement between the company and the corporation of the municipality. The provisions of the agreement are thus given legislative sanction and authority. The case Mitchell & Dresch v. Sandwich, Windsor & Amherstburg Ry. Co., 32 O.L.B. 594, illustrates how imperative is the obligation on a railway company seeking to extend its tracks, to observe every legal pre-requisite to its action. In that case, the defendant company, proposing an extension of its railway in the city of Windsor, with the approval of the municipal council, failed to observe a statutory requirement in that it had not procured the consent of this Board to the proposed extension, and the Appellate Division held that the defendant was properly enjoined from proceeding with the construction of the extension until such consent was procured. For these reasons the application is dismissed, without costs.

"The Board is in receipt of letters from persons alleging themselves to be residents or ratepayers in northern Toronto, who complain of the inconvenience they suffer by reason of the removal of this track, and the consequent interruption of the car service. To such complaints the Board's only answer is that as, upon this application the city took its stand upon its strict legal rights, the Board is obliged to determine the issues involved solely upon that basis. If the city authorities have caused discomfort and loss to citizens, by destroying needlessly and in haste property which might, under some interim arrangement, have continued to serve the transportation requirements of a portion of the community, the citizens must carry their complaint to the city authorities."

The result of the city's action in removing the tracks, etc., is that the gap between the north end of the Toronto Ry.'s Yonge St. line where the C.P.R.'s Leaside-West Toronto branch crosses that street, and the T. & Y. R. R.'s southern terminus is now about 1,220 ft. Until a few months ago, when the building of the Yonge St. subway was commenced in connection with the C.P.R. track elevation, the T. & Y. R. R. tracks ran down to the north side of the C.P.R. tracks and it had a station on the west side of Yonge St. so that passengers had only a few feet to walk to transfer from the city to the interurban cars. Then the T. & Y. R. R.'s southern terminus was moved further up Yonge St. to Shaftesbury Ave. and now it has been moved still further north to Farnham Ave., the result being that a considerable impetus has been given to the jitney service.

**Toronto Civic Railway Car Shop.**—The Works Commissioner, who was instructed by the Board of Control to prepare an estimate for a car building shop, has reported that in his opinion it would be unwise to establish one, and that it would be more economical to have cars required built by car builders catering to a Dominion wide business.



## Lavatory Accommodation on Rural Electric Railways in Ontario.

The Board of Railway Commissioners issued a circular recently to suburban and interurban electric railways enclosing a copy of a report by its Mechanical Expert, Jas. Ogilvie, re lavatory arrangements on cars, and asked the companies to furnish the Board with their views on the installation of lavatory equipment in each car as compared with supplying station buildings at convenient distances apart, each one to be equipped for both men and women. Mr. Ogilvie's report is as follows:—

"In connection with Mr. Gillett's report attached in which he refers to lack of lavatory accommodation on Chatham, Wallaceburg & Lake Erie Electric Ry., I deferred reporting on this matter until such time as I had an opportunity of visiting some of the electric railways under the Board's jurisdiction to see if accommodation of this kind was provided, and if it was really necessary for the benefit of the public.

"The London & Lake Erie Ry. and Transportation Co. runs between London, St. Thomas and Lake Erie, and has 16 large motor cars, each car being equipped with one lavatory room. The Windsor, Essex & Lake Shore Rapid Ry., which runs out of Windsor, has 7 large motor cars and 3 trailers, the mileage being about 36 miles. It has provided lavatory accommodation on all its cars with the exception of the trailers. The Chatham, Wallaceburg & Lake Erie Ry. has 5 large motor cars and 2 open trailers. It has one run out of Chatham 18 miles long and the other 14 miles. It has no lavatory accommodation on these cars. The Oshawa Ry. has 7 large motor cars, but no lavatory accommodation is provided as the longest run is about 4½ miles, and from the centre of the city. The Brantford & Hamilton Electric Ry. has 3 large motor cars, and no lavatory accommodation. The mileage is about 25 miles. The Hamilton & Dundas St. Ry. has 3 large motor cars, and no accommodation for a run of 7 miles. The Hamilton Radial Ry. has 4 cars, a 21½ miles run, and no lavatory accommodation. The Niagara, St. Catharines & Toronto Ry. has 26 large motor cars, and no lavatory accommodation provided in any of them.

"From interviews which I had with the managers and other officers of the various railway companies which I visited, they are very much opposed to the idea of providing lavatory accommodation, owing to the fact that their systems run through and in and out of cities and through quite a number of villages. Some of them stated they had already tried it in some of their cars and had taken them out on account of its being a nuisance and source of annoyance. The Ontario Railway and Municipal Board has taken this matter up with the Hamilton, Grimsby & Beamsville Ry. management, and has asked it to provide the accommodation above referred to, but I understand from the management that the people along the route have very decided objections to the installing of lavatories in the cars, owing to the fact that the railway in a great many instances runs along in front of their residences and is located close to the sidewalk. In an interview which I had with officials of the Ontario Railway and Municipal Board, I was advised that the Hamilton, Grimsby & Beamsville Ry. management has appealed against the Ontario Board's order, claiming that that Board has no jurisdiction, and that the responsibility for such orders would rest entirely with the Dominion Board of Railway Commissioners.

"Some of the Montreal and Southern Counties Ry. cars have been equipped with

lavatory accommodation, but are not in general use. While there is no doubt that the accommodation above referred to might be beneficial, I am afraid it would also prove a considerable nuisance, if it was made compulsory for all cars to be equipped with accommodation of this nature. If on the other hand it is deemed necessary, I would recommend that the matter be taken up with the management of the various electric roads under the Board's jurisdiction, and that they be asked to file a statement showing the number of cars on the various runs with lavatory accommodation, if any, also to file their objections, if any, to providing this accommodation on all their suburban cars, or runs of 15 miles or over."

### Dominion Power & Transmission Co.'s Reply.

The following reply was sent to the Board by E. P. Coleman, General Manager, Dominion Power & Transmission Co.: "I beg to submit our views in this matter as applied to each and all of the interurban electric railways under our control and management regardless of jurisdiction:

"HAMILTON & DUNDAS ST. RY. (Provincial jurisdiction).—This railway has an extreme distance between terminals of 6.98 miles, of which 4.34 is on city streets. It is obvious that the use of car lavatories on this line would be uncalled for and unnecessary, as the stations at each end are provided with conveniences.

"HAMILTON RADIAL ELECTRIC RY. (Dominion jurisdiction).—This railway has an extreme distance between terminals of 21.46 miles, of which 8 miles is on the highways. The heaviest traffic is confined to the section between the Hamilton terminal and Burlington, 10.87 miles, and is more in the nature of street railway than of interurban railway traffic. This portion of the line crosses Burlington Beach and, with the exception of 3.25 miles, is on city streets and highways which are so thickly settled that it would be impossible to use conveniences on the cars without creating a public nuisance. The section from Burlington to Oakville, which is nearly all on private right of way, is only 10.59 miles in length, with a schedule running time of half an hour. The traffic is, and will be for a long time, extremely light on this section. Ample conveniences are provided at Hamilton and Oakville and provision is being made at Burlington.

"HAMILTON, GRIMSBY & BEAMSVILLE ELECTRIC RY. (Jurisdiction in question).—This railway has an extreme distance between terminals of 22.6 miles, practically all on or along the public highway and for a large portion of the way in front of residences and over city and village streets. Many objections to the use of car lavatories have been made by residents along the line, and there is no doubt that their use would create a nuisance. Accommodations are provided at Hamilton, Bartonville, Grimsby and Beamsville.

"BRANTFORD & HAMILTON ELECTRIC RY. (Dominion jurisdiction).—This railway has an extreme distance between terminals of 22.91 miles, of which all but 1.24 miles is on private right of way. Hourly trains are run on schedule time of one hour east and 65 minutes west and we have no complaints of lack of accommodation of this nature, as well equipped lavatories are provided at Hamilton and Brantford.

"IN GENERAL.—As all cars are habitually interchanged between these railways, the installation of lavatories on any of them would compel their use on all, and while

we are willing and anxious to provide all necessary or desirable accommodation for the comfort and convenience of our patrons we are firmly of the opinion that accommodation of this nature is unnecessary and unwise, principally for the following reasons, viz:—

"Electric railway traffic is generally of a different nature to that obtaining on steam railways, as it is mainly confined to local patrons who are never far from their own homes or the convenience of their hotels or offices, and the short time spent on electric cars comes more in the category of the cab ride or the walk between office and home than in the case of the traveller who settles down for a journey of some distance on the larger railway lines.

"An electric car is usually smaller than the standard steam railway car, is more likely to be crowded, on account of the fact that single car units are used, and the problem of ventilation under the best of conditions is a serious one. Lavatories, when installed, are necessarily placed in a conspicuous position near the centre of the car, and among the passengers, and our observation has convinced us that it is impossible to prevent a disagreeable odor throughout the car from their use.

"The conspicuous location of the lavatories above referred to has a tendency to discourage ladies and the better class of passengers from taking advantage of the accommodation and their use will be generally confined to the rougher class of men, particularly those partially under the influence of intoxicating liquor, who will neglect the terminal accommodations and use those on the cars, many times in a manner which will be offensive to other passengers. That this is a serious objection to car lavatories is proved by the great difficulty that we have in keeping our terminal lavatories in a decent condition, even with an attendant always on duty.

"Electric cars are not confined to a private right of way, but must of necessity occupy thickly settled streets for a very considerable portion of the time and, with the best of care, a vehicle of this description, when provided with a lavatory, will at times become a carrier of the best imaginable type for the distribution of disease germs.

"As electric railway terminals and yards are, from the nature of the traffic, invariably located in the most congested and busiest portions of the communities which they serve, the cleaning of cars and disposal of the sweepings and waste water is always a serious problem, and it will be readily perceived that the cleaning of lavatories in these yards without danger to public health is practically impossible. Under the best of conditions, and even if proper sewer connections can be arranged, constant cleaning of accommodations of this description will inevitably create a condition of the station surroundings which will in time become a public nuisance.

"The use of car lavatories is not a common practice even on electric railways of large mileage, and the fact that some lines have thoughtlessly adopted their use, apparently from a desire to become as much like a steam railway as possible, should not be accepted as a convincing argument in favor of forcing them upon electric lines of the nature and extent of those operated by this company and generally throughout the Dominion. It is our opinion that the safest and best method to adopt in the interest of public health and safety, as well as for the convenience of the patrons of electric railways as a whole, is to establish proper stationary lavatories at the terminals and at convenient points along the line for the use of patrons who may be constrained by necessity, and at which cars may be held or stopover checks issued."



Steel Motor Cars, London and Port Stanley Railway.

Canadian Railway and Marine World for July contained a complete description of the L. & P.S.R. rolling stock, the steel motor cars being illustrated by an elevation and floor plan. An illustration of one of the completed cars is given herewith. They are 61 ft. 1¾ ins. long, over buffers, and are exceptionally wide, viz., 9½ ft. over posts. This makes possible seats 40 ins. long, with aisle 26 ins. wide. The car is divided into baggage, smoking and general passenger compartments. In the main compartment there are two lavatories, one for men and one for women, with metal tile walls, and tile floor set in cement. The bottom fram-

mahogany being finished in a rather light tone, and great care having been exercised in selecting soft harmonizing colors for ceiling and stained glass. Nothing in the way of incidental equipment, such as buzzers, air sanders, fire extinguishers, etc., has been omitted, and a large switch cabinet extends from floor to ceiling, with slate back, containing all electrical switches. The roof is a compromise arch design. They were built by the Jewett Car Co., Newark, Ohio, and electrically equipped by the Preston Car & Coach Co.

Berlin and Waterloo Street Railway Annual Statement.

Following is the statement for the calendar year 1914 of this line, which is

Debenture interest .....	\$8,723.27
Interest on loans .....	780.22
Bad accounts written off ....	29.04
	<u>9,532.53</u>
Net profit .....	\$5,329.73
ASSETS.	
Plant .....	\$181,346.94
Accounts receivable .....	2,544.06
Supplies on hand .....	10,402.34
Cash on hand .....	683.02
	<u>\$194,976.36</u>
LIABILITIES.	
Debenture account .....	\$157,914.24
Accounts payable .....	3,708.48
Interest accrued but not due .....	3,807.03
Depreciation account .....	22,048.05
Profit and loss balance, 1913 .....	2,117.50
Bank overdraft .....	51.33
Balance, 1914 .....	5,329.73
	<u>\$194,976.36</u>



Steel Motor Cars, London and Port Stanley Railway.

ing is made up of structural sills with pressed steel cross bridging, plate bolsters with pressed steel fillers being used. Side posts are of channel and tees of light section, with angle iron corner posts. The posts in bulkhead and partitions are also of channels, with channel header across between side plates. The entire outside and bulkheads are composed of steel plates. Carlines are pressed steel, and the roof is of large steel plates laid across the full width of the car. The cars are fitted with extra heavy steel pilots, and M.C.B. draw bars. The interior finish is mahogany inlaid, with inside and outside Gothic sash with cathedral glass, and storm sash fitted to all body windows. The ceiling is of agasote, and the wooden floor is covered with linoleum. The car is lighted by semi-indirect system with pendant fixtures, light wiring being in concealed conduit, as is also heater wiring, heaters being of the cross seat electric type. There is a vestibule on the rear end only, with triple steps covered with steel trap doors. The lavatories are very completely equipped with flush hoppers, wash stand with liquid soap holder, towel rack, etc., all fixtures being nickel plated. The interior of the cars present a tasteful appearance, the

owned and operated by the City of Berlin, Ont.:

RECEIPTS.	
Passengers .....	\$45,241.94
Mails .....	1,806.59
Parcels .....	233.15
Tolls from other companies .....	3,586.92
Advertising .....	564.00
	<u>\$51,431.60</u>
EXPENDITURES.	
General Expense.	
Salaries .....	\$1,392.29
Office expenses .....	1,169.66
Legal expenses .....	37.35
Insurance .....	2,054.17
Uniforms, advertising, etc. ....	1,909.19
Heating barns .....	319.32
	<u>\$6,881.98</u>
Repairs and Maintenance.	
Track and line .....	\$1,819.10
Building repairs .....	4.94
Car and motor repairs .....	4,504.21
Storage battery repairs, etc. ....	95.05
	<u>6,423.30</u>
Transportation Expenses.	
Power .....	\$7,422.48
Wages .....	12,351.27
Removing snow .....	115.10
Supplies .....	1,910.40
G.T.R. crossing .....	1,464.81
	<u>23,264.06</u>
	<u>36,569.34</u>
Gross profit .....	\$14,862.26

Rolling Stock for Three Rivers Traction Company.

The Three Rivers Traction Co., Three Rivers, Que., has ordered from the Ottawa Car Manufacturing Co. six semi-convertible single truck electric railway cars, the principal particulars of which are as follows:

Car bodies: Semi-convertible type for one-man operation. Construction, wood, with underframe reinforced with steel plates. Roof, arched type, with automatic ventilators. Interior finish, wood throughout. Seats, standard rattan upholstered. Trimmings, polished bronze. Heaters, electric. Electric lighting and bell systems, standard. General dimensions as follows: Length of body over end cross sills. 21 feet Length of car over vestibules ..... 31 feet Length of front vestibule ..... 6 feet Length of rear vestibule ..... 4 feet Length of car over bunters ..... 32 feet Width over posts ..... 8½ feet Height from rail to top of roof .... 11ft. 5 ins. Seating capacity ..... 34 per car Trucks: 12 ft. wheel base, with chilled iron wheels and standard hot rolled steel axles. Motor equipments: Westinghouse 101-



11.2 two motors per car, with one controller, circuit breaker and other accessories.

All brakes Westinghouse schedule S.M.E. complete, with motor driven compressor and other accessories. Cars will also be equipped with life guards and standard track sanders.

The Three Rivers Traction Co. has also ordered from the Ottawa Car Manufacturing Co. one snow sweeper, which, with the cars, fully equipped, will be ready for delivery by the end of August.

### Retirement of British Columbia Electric Railway's Chief Engineer.

G. R. G. Conway, M. Can. Soc. C. E., for over four years Chief Engineer of the British Columbia Electric Ry., retired from that position June 30, with the intention of practising as a consulting engineer with office in Toronto. He will continue his association with the B. C. E. R. as Consulting Engineer. He was the guest of the company's staff at dinner, at Vancouver, June 28, Geo. Kidd, General Manager, being in the chair. In proposing Mr. Conway's health, the chairman read a cable from the company's head office in London, Eng., in which the directors expressed regret at Mr. Conway's "withdrawal from the duties which he has carried out with such conspicuous success, and to the great advantage of the company." In addition to Mr. Kidd and Mr. Conway, the speakers of the evening were: F. R. Glover, General Executive Assistant; A. T. Goward, Local Manager, Victoria; V. Laursen, Solicitor; W. G. Murrin, General Superintendent; G. Porter, Assistant Chief Engineer; G. M. Tripp, Superintendent, Victoria; W. H. Fraser, Electrical Superintendent, and A. Hill, of the engineering staff.

On the following day Mr. Conway was presented by the company's employes with a rose bowl, of solid silver, gold lined, and mounted upon an oak base, suitably inscribed.

### The Galt, Preston and Hespeler Street Railway's Rights in Berlin.

At the Berlin, Ont., City Council's meeting July 19, a letter was read from Martin N. Todd, President Galt, Preston and Hespeler St. Ry., respecting the action of the council in fixing a franchise price of \$75 a month for the use of the city streets. The company is at present paying \$150 a month to the Light Commission for the use of the tracks and power, which is considered \$75 more than the actual value of the privilege. Mr. Todd informed the council that if the recent action is insisted on the company will use a branch line running to Waterloo exclusively, and erect a station on Queen St. south for the convenience of city passengers. Mr. Todd reminded the council that the city will in the near future be connected with Port Dover when the new Lake Erie & Northern line is electrified, toward which Berlin has not been asked to contribute, but from which it will receive the same benefit as other towns which have voted considerable sums as bonus. The communication was referred to the railway committee to endeavor to arrive at an amicable arrangement.

The Toronto City Council passed a resolution recently instructing the Commissioner of Works to report on the probable cost of inaugurating a rail-less trolley system in conjunction with the civic railway, with a view to providing a one-fare service to the down town districts, with a transfer to any part of the civic railway. The Works Committee reported against the proposal.

## St. John Railway Rights re Track Construction.

Judgment has been rendered in the case of the St. John Ry. against the City of St. John, N.B., for damages for an interruption of its railway and service, for preventing the company from relaying its tracks, for a declaration as to its rights where tracks have been taken up by the city in changing street grades, and for an injunction restraining the city from interrupting or interfering with the railway. During the course of the original action, the parties agreed on a special case, and the following four questions were submitted to the Supreme Court of Appeal.

(a) When city removes rails under sec. 11 of 50 Vic. ch. 33, can it require a grooved rail to be used instead of a T rail

(b) When city lays a pavement of either bitulithic tar or water bound macadam or granite, can it require the company to provide a foundation for its rails of concrete or other unyielding material?

(c) Can the city require the company to provide a foundation for its tracks which will keep the rails at the grade determined by the city?

(d) Can the city require the company from time to time to restore its tracks to grades which have been established by the city at the time of the laying of the tracks, or to grades which from time to time may be established by the city?

Following is a summary of the judgment.—The answers to these questions depend on the construction given to secs. 7, 8, 9, and 11 of ch. 33 of the acts of 1887, concerning the Peoples St. Ry. Co., which was acquired by the St. John Ry. Co. The company was originally incorporated to operate by horse cars, but power was subsequently obtained to operate by electricity. Sec. 7 empowers the company to operate over such streets as may be agreed upon between the company and the city. Sec. 8 provides that the tracks shall be laid so as not to interfere with ordinary traffic, the rails to be of such pattern as the city council may approve, and laid level with the street surface to the satisfaction of the City Engineer, or other authorized person. Sec. 9 provides that the tracks shall from time to time conform to the grades of the various streets and highways through which they run, and the grades shall not be changed without consent of the city. Sec. 11 provides that the city or municipality through which the tracks pass shall have the right to take up or open the streets traversed, for altering the grades or any other purpose, the removal of rails to be done so as to cause as little interference as possible with the operations of the railway, and that the city shall not be liable to make compensation to the company for anything done under the authority of the act.

Regarding sec. 8, the words are very plain and clear. When the company built its line, the rails were of a pattern approved by the council, and were T rail, which pattern has since been used by the company. Dealing with the first question (a), sec. 11 gives the city the right to take up the streets traversed by rails for altering the grade or other purposes, but if the city removes the rails it is not obliged to replace them, that must be done by the company. Regarding an order to change from T to grooved rail, if the company desires to extend its lines and lay a new track, it has to get the city's approval of the pattern of rail to be used, and the city can prescribe any pattern of rail it deems best, and it may be that if rails are worn out and it becomes necessary to lay new rails, the city could prescribe a different pattern from those previously used.

In this case, however, it is not necessary to decide that point. This is not the laying of new rails. The city for its own purpose has removed the rails, and when that has been accomplished, the company can replace the rails so removed, and the city cannot compel the company to throw aside the rails so removed and replace them with others of a different pattern. The only difference between the city removing rails and a private corporation doing so, is that in the latter case the private corporation must replace the rails, and in the former case, the company must do it.

The answer to the first question is no. Regarding the second question (c), the company is obliged to have a proper foundation for its rails, and the act does not authorize the city to stipulate what that foundation shall be. The onus is on the company to have a sufficient foundation, and the rails must, at all events in the first instance, be laid to the satisfaction of the City Engineer, and laid level with the street surface. It is sufficient that the foundation be suitable and sufficient to keep the rails at the prescribed level. The answer to the second question is no. The third and fourth questions seem to be answered by the act itself. The company must keep its rails at the grade determined by the city, and to do so must provide a foundation sufficient for that purpose. The city has the right to alter the grades of streets, and when the grades are so altered, the company must restore its tracks to a level with the new grade, and supply foundation suitable to keep them so. No order was made as to costs.

### Negotiations for the Purchase of Chatham, Wallaceburg and Lake Erie Railway.

The Hydro Electric Power Commission of Ontario is said to be negotiating to secure the C.W. & L.E.R., to be used as part of the proposed hydro electric railway system for Ontario to be operated under the commission. The C.W. & L.E.R. runs from Wallaceburg, Ont., to Erie Beach, on Lake Erie, 32.85 miles, with a short branch from Paincourt Jct. to Paincourt, a total mileage of 40.77. It has freight interchange with the Michigan Central at Charing Cross, Canadian Pacific at Chatham, Pere Marquette at Wallaceburg, and Wabash and Grand Trunk at Chatham. Some two or three years ago the C.W. & L.E.R. passed into the control of Mackenzie, Mann & Co. interests. The principal officials are President, D. A. Gordon, Wallaceburg, Ont.; Vice President, A. J. Mitchell, Comptroller, Mackenzie, Mann & Co., Ltd., Toronto; General Manager, W. Norris, Chatham. It is said if the negotiations are successful the line will be made the nucleus of a hydro radial railway system in that part of the province, and that it will be extended through Petrolia to Sarnia.

The Ontario West Shore Ry. Fiasco.—The Kincardine, Ont., Town Council passed a resolution, July 5, further extending the powers of the special committee appointed to act in conjunction with committees of the municipalities interested in this derelict railway. The council has now authorized the committee to secure expert advice in reference to the suit to recover money alleged to have been paid out illegally, and also authorize it to engage new counsel in the event of the counsel at present engaged declining to act.



## The Lake Erie and Northern Railway Takes Over Part of the Grand Valley Railway.

The negotiations which have been in progress for some time between the Lake Erie and Northern Ry., represented by its General Manager, Martin N. Todd, and the City of Brantford, with reference to a portion of the Grand Valley Ry. section of the lines operated as the Brantford Municipal Ry., and the electrification of the L.E. & N.R., have been brought to a successful termination. As a result, the L.E. & N.R. acquires for \$30,000 the portion of the Grand Valley Ry. from Paris to Galt, about 13 miles, and the G.V.R. transformer station in Galt. The City of Brantford retains the rails, overhead work, etc., which will be removed from Blue Lake siding, about 4 miles from the Paris end of the section, as the cement works at Blue Lake have been closed permanently. This arrangement gives the L.E. & N.R. practically what it wanted in Paris, and relieves the City of Brantford from the necessity of spending about \$65,000 to repair the Paris-Galt line, and its future maintenance. It also enables the L.E. & N.R. to get rid of two level crossings over the Grand Valley at Paris and Galt. The L.E. & N.R. will use about half a mile of the Grand Valley track at the Galt end, to connect with the Galt, Preston & Hespeler St. Ry., and will scrap the rest of the line to Paris, but later on it may operate over a short distance of the Paris end of the Galt-Paris section of the Grand Valley, into the industrial section of Paris, for freight purposes only. It will handle passenger business from its own station in Paris, that being the stipulation by the City of Brantford, which does not want the L.E. & N.R. to compete with it for passenger business on the lower level in Paris.

The important feature of the arrangement is the fact that the entire L.E. & N.R. line from Port Dover to Galt, 53 miles, is to be electrified, and that a new electric car terminal will be established at the foot of the embankment near Lorne Bridge, Brantford. The electrification work on the line between Galt and Brantford, about 22 miles, has been started. Contracts for the electrical material for this section were placed in May, with the option of extending them to also include the Brantford-Port Dover section. It is expected to have the Galt-Brantford section electrified and ready for traffic in October. The grading, track laying, and other work on the Brantford-Port Dover section, about 30 miles, is being pushed forward, and it is hoped to have the electrification of it completed by December. The overhead equipment will be of catenary construction, aluminum messenger wire with steel centre having been ordered from the Northern Aluminum Co. Steel trolley wire will be hung at 15 ft. spacings, with feeders every 50 ft. This system is a new one in Canada, but it has been used by the Pacific Electric Co. in California, and by other United States companies, with, it is said, satisfactory results.

The L.E. & N.R. has ordered 4 motor and 2 trailer cars, and 2 combination passenger and baggage cars from the Preston Car and Coach Co. The bodies will be 48½ ft. long, with steam railway car type of vestibule at each end, standard buffing device, M.C.B. couplers, Canadian Westinghouse motor equipment, multiple unit control, 1,500 volts, seating accommodation for 70 passengers, steel underframes and steel frames covered with wood inside and outside. The various cars will be of the same size and type as, and will be very similar in appearance to those on the Galt, Preston and Hespeler St. Ry. Two 60-ton electric freight locomotives

and the electric car equipment have been ordered from the Canadian Westinghouse Co. A contract for the sub station equipment has been given the Canadian General Electric Co. The sub station at Galt will be a portable one for the present, and there will be sub stations at Brantford and Simcoe, each equipped with 500 k.w. outfits.

Power will probably be taken from the Hydro-Electric Power Commission of Ontario, through its local subsidiaries. The Galt, Preston & Hespeler St. Ry. is said to have been the first electric railway in Ontario to use this power.

The section of the Grand Valley Ry. between Paris and Galt will not be taken over by the L.E. & N.R. until its electrification is completed, but it will be operated by the Brantford Municipal Ry. Commission in the meantime. The L.E. & N.R. intends giving an hourly service between Galt and Brantford, and a two hour service between Brantford and Port Dover.

The L.E. & N.R. is leased to the C.P.R. for 99 years. It is expected that the Galt, Preston & Hespeler St. Ry., which also operates the Preston & Berlin St. Ry., and is owned by the C.P.R., will be amalgamated with the L.E. & N.R. under the latter name. M. N. Todd is President of the Galt, Preston & Hespeler St. Ry., and General Manager of the L.E. & N.R., and will doubtless continue in charge of the amalgamated lines. A Galt paper points out that while the lines referred to have the benefit of close affiliation with the C.P.R., they have the advantage of being locally operated, which is a great convenience to the communities in the districts served.

The Brantford Municipal Ry. will, in future, consist of the old Brantford St. Ry., and the Brantford-Paris section of the old Grand Valley Ry., the latter being about 8 miles. The entire transaction by the city in acquiring the Brantford St. Ry. and the Grand Valley Ry. involved \$300,326, of which \$137,000 was provided in cash, the balance representing original bonds \$125,000, mortgages \$2,400, and installments to accrue on pavement account about \$36,000. The city has provided money for the betterment of the city lines and the line to Paris, the construction of the East Ward and Eagle Place loops and for new cars, etc. Plans had been made for bringing the Paris-Galt section up to standard at a cost of about \$65,000. The city, by the present arrangement, is relieved from this expenditure, and will receive \$30,000 for the Paris-Galt section. The business done on the line is reported to be sufficient to cover operating expenses and interest on debt, but not to provide for depreciation or sinking fund. For the latter purpose \$4,000 a year is required.

**Toronto Ry. Wages.**—The negotiations between the company and the men regarding the continuance of the agreement regarding wages have resulted in the agreement which has been in force for the past three years being renewed for a further two years. The men originally demanded an all round increase of half a cent an hour, which was refused by the company. It was then suggested that the old agreement be renewed, the only difference being as to whether it was to be for two or three years. The rates paid are as follows: Motormen, conductors and motor truck repairers, first year 23½c an hour, second year 25½c, third year 27½c, for Sundays 4c extra; shed men 24c, foremen 27c. Regarding uniforms, first year men pay cost, second year men half cost, third year men supplied free.

## Serious Electric Railway Wreck at Queenston.

While an excursion party from Toronto was returning from Niagara Falls, to take the boat at Queenston, for Toronto, July 7, one of the cars on the Niagara Falls Park and River Ry. left the track while descending the Queenston Heights hill and collided with a tree, wrecking the car, killing 13 of the passengers and injuring several others. Later, two of the injured passengers died, making 15 deaths. A coroner's inquest was opened at Queenston, July 19, representatives of the various parties interested, including the Ontario Government, the Ontario Railway and Municipal Board and the City of Toronto, as well as relatives of the deceased and injured, being present. The motor man in charge of the car, is reported to have stated that for some time prior to it leaving the track, he felt that he had lost control, owing to the rails being wet and greasy. The car had seats for 84 passengers and the conductor is said to have collected 157 tickets, which did not include children in arms.

Replying to a number of allegations against the construction and equipment of the car E. G. Connitt, President, International Ry., Buffalo, N. Y., which controls the Niagara Falls Park and River Ry., issued the following statement, July 9: "Mr. Clark, representative of the Ontario Railway and Municipal Board, examined the track and car yesterday and as I understand it, found no fault with the track or the equipment, nor did he find any defects that would have caused the accident. As near as I have been able to learn and as stated by the motorman, the car got beyond control due to the slippery rails on account of the weather conditions. Showing there was no defect in the car, it had previously stopped at the foot of the heavy grade from Brock's monument to the junction, in order to throw a switch. This shows the brakes were in good working order. The company had furnished plenty of cars to handle the people from Brock's monument to the dock but on account of the rain they were disposed to overload the first car. The sand box was full of heavy sand. The car certainly was in first class condition, having come out of the shops on July 6."

**The Halifax Power Co.,** by S. M. Brookfield, President, informed the Halifax, N.S., City Council, July 8, that "it has the right to supply light and power in the city, so that if the city acquires the power company's property or joins it in the development of the undertaking, the street lighting could be done, it is claimed, and 50% more light supplied for the price now paid. The private light and small power users could also be supplied at a saving of at least 25%." The letter concluded by stating that the company's representatives would wait on the council upon an early day and lay before it a proposition for the development of the company's water powers on the Indian and Northern Rivers, the city taking a half interest.

**Winnipeg Electric Ry. Fares.**—The company agreed, July 15, to sell 5 combination tickets from any part of the city to Kildonan Park, for 25 cts., and 7 children's tickets for the same amount, and the Manitoba Public Utilities Commission is making the necessary order. The Commissioner declined to make an order for reduced fares to St. Paul, on the ground that it was not advisable under present financial conditions to reduce fares. B. S. McKenzie was appointed to make a special investigation to see if a quicker service could not be given on the St. Paul's line, and platforms provided.



## Electric Railway Projects, Construction, Betterments, Etc.

**Berlin, Ont.**—A press report states: "W. D. Euler, Berlin, is interested in the construction of an electric railway to connect Berlin, Bridgeport, Bloomingdale, New Germany and Guelph." This district is already pretty well supplied with electric railways, including the Guelph Radial Ry., the Berlin and Waterloo St. Ry., the Berlin and Northern Ry., and the Berlin, Waterloo, Wellesley and Lake Huron Ry. (which includes the Galt, Preston and Hespeler Ry. and the Preston and Berlin Ry.), while the Toronto Suburban Ry. is extending its lines into the district. A number of the local municipalities are moving in the direction of having a line built in connection with the projected lines under the plans of the Hydro Electric Power Commission of Ontario. Under these circumstances it is not likely that there is anything in the report.

**Brandon Municipal Ry.**—We are officially advised that the City Council has under construction the following lines in the city: Victoria Ave., from Franklin St. to Percy St., 350 ft.; Percy St., from Victoria Ave. to Princess St., 1,800 ft., including turnout; Princess St., from Percy St. to Franklin St., 350 ft.; Princess St., from 22nd St. to 24th St., 650 ft.; Victoria Ave., 18th St. to Athletic Grounds, 250 ft.; 18th St., from Victoria St. to College, 1,725 ft.; College St., from 18th St. to 15th St., 1,625 ft., including special work. Total, 6,700 ft. For the construction at present in hand there have been purchased four curves, one right hand cross over, one left hand branch out, from the United States, and miscellaneous overhead and other material from the Boyd Electric Co., Brandon, Man. T. Boden, Brandon, Man., is Superintendent. (Feb., 1914, pg. 87.)

**British Columbia Electric Ry.**—We are officially advised that the new car barn at Mount Pleasant, Vancouver, is practically completed, and is being used. (June, pg. 224.)

**Calgary Municipal Ry.**—We are officially advised that the only permanent construction to be done this year will be some special work on street intersections, the material for which is on hand. It is proposed to construct immediately 1.5 miles of temporary track to a point outside the city limits so as to give connection with the military camp on the Sarcee reserve, where 6,000 soldiers are undergoing training. The material for this work is on hand. T. H. McAulay, Calgary, Alberta, is Superintendent. (July, pg. 277.)

**The Cape Breton Electric Co.** is enlarging its high tension room in its Sydney power station, to provide for another outgoing transmission line, which is in process of construction, and runs from that station to the new pumping station being built by the City of Sydney at Middle Lake, about six miles from Sydney. This sub-station will contain for the present 2 kva transformers, stepping down 22,000 three phase to 2,200 three phase, for operating the pump at present under order for the city. The pumping station and the company's sub-station, which is contained therein, is being built for double this capacity. The company has a 10 year contract with the city for supplying power to operate the station. Orders have been placed for all equipment for this work. (May, pg. 190.)

**Edmonton Radial Ry.**—The residents of the Glen Park district applied to the Edmonton, Alberta, City Council in May to have a line built, and the council has recently authorized a committee to negotiate an arrangement with the Edmonton Interurban Ry. for the use of its tracks to Glen Park, pending

further consideration of plans to build a more direct city line. (May, pg. 190.)

**Hydro Electric Power Commission of Ontario's Electric Railways.**—The Brampton Town Council has passed a resolution favoring the building of an electric railway through the town under the Commission, and has joined the Ontario Hydro Electric Radial Railway Association.

The Trent Valley district of the H.E. Ry. Association, meeting at Campbellford, Ont., June 10, passed a resolution asking the H.E.P.C. of Ontario to investigate and report upon several routes for proposed radial railways in the Trent River valley, where there is at present practically no railway accommodation. (July, pg. 277.)

**London and Lake Erie Ry. and Transportation Co.**—The St. Thomas, Ont., City Council has approved of the laying of the necessary switches so that the company can connect its tracks with the Michigan Central Rd., and to the changes proposed to be made for switching purposes. (Mar., pg. 108.)

**Montreal and Southern Counties Ry.**—It is expected that the extension from St. Cesaire to Granby, Que., 16 miles, will be completed as far as Abbotsford early in the autumn. The contract is being carried out by the Grant Campbell Co.

The construction of the sub power station at Granby is being proceeded with, so as to be in readiness for the completion of the line. (July, pg. 277.)

**Morrisburg and Ottawa Electric Ry.**—An unconfirmed press report states that work will be resumed at an early date upon the construction of this projected railway, three miles south of Billings Bridge, near Ottawa, and that it will proceed southerly to Morrisburg. (June, pg. 227.)

**Oshawa Ry.**—In the event of the town council deciding to do any further street paving, of which about half a mile is being considered, the company will do its proportion of the work. D. A. Valteau, Oshawa, Ont., is Superintendent.

**Ottawa Electric Ry.**—The pavement renewal work on Bank St., Ottawa, was completed June 30, and the Somerset and Britannia cars, which had been run on temporary routes, returned to their regular routes, July 1. The work was done by the Ottawa Construction Co. (July, pg. 277.)

**Quebec Ry., Light and Power Co.**—We are officially advised that the company is installing a double track right hand curve at the corner of Palace and St. John Sts., Quebec, on its City Division. (April, 1914, pg. 184.)

**St. John Ry.**—Under a decision of the Supreme Court of New Brunswick, which was reported to the St. John city council, July 7, the company must now supply a rigid base under all its rails. Up to the present the city has laid a concrete base of from 5 to 7 ins. in thickness, which work, under the decision, will have to be done in future by the company. Commissioner Potts states that work on the Douglas Ave. line will be started very shortly, and that he would see that the company puts in a satisfactory base.

The city commissioners on July 7 inspected the company's lines, and it is reported found defective rails on several streets. (July, pg. 277.)

**Toronto Civic Car Lines.**—We are officially advised that the City of Toronto is building 0.75 mile of double track on Bloor St., from Dundas St. to Quebec Ave.; and 0.63 mile of double track on Lansdowne Ave., from St. Clair Ave. to the C.P.R.

The building of car barns on Danforth Ave. is also under consideration.

The approval of the Ontario Railway and Municipal Board for the building of the line on Bloor St. was given July 7, and on the same day the Board of Control directed the preparation by the Works Commissioner of a report on the cost of establishing a car construction and repair shop for the civic car lines. (April, pg. 145.)

**Toronto Civic Ry.**—The City Council has awarded a contract for the supply of oak ties for the construction of the Lansdowne Ave. line, to the Robert Laidlaw Co., at \$30.25 per 1,000 ft. b.m., equivalent to 84.7c. a tie. They are to be 6 by 8 ins. by 7 ft.

**Transcona, Man.**—The Transcona Town Council on July 9 asked H. W. Adcock, Winnipeg, to put up a satisfactory bond at once that he would carry out his proposal for the building of an electric railway from Transcona to Winnipeg. In the event of failure to put up the bond the negotiations will be dropped. (July, pg. 277.)

## The Montreal Tramways Company's Franchise Question.

The question of the granting of a new, comprehensive and extended franchise to the Montreal Tramways Co., in return for the old one held by the old Montreal St. Ry., which expires in 1922, and the subsidiary ones held by it and the allied companies in the districts added to the city since the original franchise was granted, has been brought into the courts. Several propositions had been submitted to the Board of Control, notably one by Controller Hebert, which was placed before the Board June 18. The plan proposed to grant a new franchise for 30 years upon the surrender of all existing franchises; that the city appoint two directors on the M.T. Co. board; the city percentage of earnings to remain as at present, with a minimum payment; gross earnings of subways to be built by the city to be divided between the city and the company; new lines and routes to be arranged on the advice of a city planning expert; the removal of all old cars and the building of new cars; the adoption of all new devices and inventions for the betterment of the service; and a 5 cent fare. The proposal was discussed at several meetings of the Board of Control, and a special meeting was called for June 30 for the purpose of approving of the plan and sending it on to the City Council for consideration. Meanwhile, a statement was made that there was a letter in existence, dated June 16, in which Controller Hebert submitted conditions upon which he would support the plan, viz., a receipt in full of a certain account which he owed; the payment of \$100,000 in cash before the vote was taken in the Board of Control, and a further payment of a similar sum in cash within 24 hours of a favorable report made by the controllers to the council. On the morning of June 30, R. Tourangeau, a citizen, made an affidavit in which Controller Hebert's letter was set out, upon which an interim injunction was granted, operative to July 6, restraining the Board of Control from taking any action on the matter. Although the interim injunction had been obtained, it does not appear that it was actually served upon the Board prior to the time of the meeting. When a vote was called for by the Mayor on Controller Hebert's motion to send forward his plan for approval by the Council, Controllers McDonald and Amey protested and refused to vote, but Controllers Hebert and Cote voted in favor and the Mayor declared the motion carried. On receipt of the order of court at a subsequent stage, the Mayor stated that no action would be taken upon the



motion pending developments. On July 2, R. Tourangeau obtained a further injunction restraining not only the Board of Control, but the City Council and the Secretary of the Board of Control from taking any action in the matter until after July 6, and calling upon the Mayor and Controllers Cote and Hebert to show cause why they should not be committed for contempt of court. Pending further action by the courts all the papers were stored in the safe at the city hall. The injunction case was finally adjudicated upon July 14, when Justice Pauvoton made an order directing the Mayor and Controllers Cote and Hebert to appear before the court on July 16, to show cause why they should not be adjudged guilty of contempt of court.

An interlocutory injunction was granted at Montreal, July 20, to restrain the Board of Control and the City Council from further dealing with the Montreal Tramways Co.'s franchise renewal question until such time as the court shall have been afforded an opportunity to enter upon deliberations as to the merits of the allegations and counter allegations arising from the board adopting the proposal of a 30 years franchise.

A number of affidavits have been filed in connection with the matter, bringing in the proposed franchise to the Canadian Automobile Co., and the recent Drolet St. land deal, in all of which allegations are made respecting dealings between Controllers Hebert and McDonald respecting votes at the Board of Control. (July, pg. 275.)

### Proposed Absorption of Halifax Electric Tramway Company.

The hearing by the Nova Scotia Public Utilities Commission of the application of the Nova Scotia Tramways and Power Co. to take advantage of the powers contained in its act of incorporation, was concluded at Halifax, July 9. The company in its petition asks that the capital of the company be increased to \$10,000,000; that \$5,000,000 first mortgage 30-year bonds be issued at 5%, \$3,000,000 to be presently issued, and the balance of the future requirements only to be issued against 80% of expenditures on capital account when the earnings of the company for the fiscal year preceding any proposed issue have been at least one and three quarters times the net charges on the bonds already issued and on those proposed to be issued, and when such issue is approved by the Public Utilities Commissioners. The petition also asks the board to approve of \$3,000,000 par value of said bonds, 32,500 shares of preferred stock and 62,500 shares of ordinary or common stock, to the order of the Nova Scotia Light and Power Co. The petition is followed by schedules giving a description of the Halifax Electric Tramway Co.'s property and plant, of the power sites, lands and privileges on the Gaspereau River, a description of the equipment of the cost of development of the Gaspereau made by J. G. White and Co. of New York, which is placed at \$1,534,960. The net earnings under the proposed arrangement are estimated to be sufficient to pay between 5 and 6% on a total indebtedness of \$12,500,000.

H. A. Lovatt, K.C., the principal counsel for the petitioners, made a lengthy statement in opening the proceedings. The money which would be received would be devoted to the following purposes:—\$800,000 to the retirement of mortgages outstanding on the Halifax Electric Tramways Co.; \$1,227,780 to construction of works; to provide for taking over of the various properties, and the balance for contingencies and working capital. The J. G. White Co.'s report showed that within 55 miles of Hal-

ifax, on the property owned by the company there was a lake area which would give a storage of 2,000,000,000 cubic feet of water, which would produce about four times the electric power at present available in Halifax. The estimated cost of the works necessary for the development of this power was put at \$1,534,000. The report of P. Sothman, formerly Chief Engineer of the Hydro Electric Power Commission of Ontario, confirmed the White report.

The Halifax City Council and the Municipal Association were represented, and several expert witnesses were examined. The commission simply heard the evidence, which when transcribed will be sent to the city council and to the Municipal Association, on behalf of which arguments will be submitted in writing for the consideration of the Commission before judgment is given.

### Calgary Municipal Railway Investigation.

Charges made against the management of the Calgary, Alberta, Municipal Ry., and particularly against the Superintendent, T. H. McCauley, at the instance of Alderman Frost, are being investigated by Justice Simmons. The inquiry was opened July 8. No formal charges were made, and the judge has been occupied in taking evidence. During the first four days of the hearing 45 documents were referred to and put in evidence, and a number of witnesses were examined. It was stated, July 10, that Alderman Frost had 70 additional witnesses to call, which would show that the inquiry would be a protracted one. From the evidence given it appears that there has been some friction between the Superintendent and the employees. It appears that the men are not connected with a union, but that there is an association, which has a grievance committee, at the meetings, of both of which the Superintendent is frequently, if not always present. The association meets in two distinct sections—the day men and the night men meeting separately. The two sections apparently do not work in harmony, as evidence has already been given showing that what one section does is frequently not approved by the other, and that one president, who resides at the meetings of both sections, resigned because of the differences. The evidence so far given does not make any direct charges, although there are suggestions of charges, but they all appear to have to do with the internal relationship of the chief operating officer and the employees.

### Cars for the Toronto Civic Railway.

The Toronto City Council invited alternative tenders recently for 4 double end single truck cars complete, and for equipment for 4 cars for the Toronto Civic Ry.'s Lansdowne Ave. line extension. For 4 cars complete there were two tenders, one at \$5,525 a car and one at \$5,200. The Works Commissioner reported that he estimated it would cost approximately \$4,750 to purchase and assemble each car, a saving of \$450 on each car as against buying them complete, and it was therefore decided to accept the following tenders:

Preston Car & Coach Co., 4 double end single truck car bodies, \$2,386 each.

Canadian Westinghouse Co., 8 ventilated motors, \$593 each; 8 circuit breakers, \$23 each, and 4 lightning arresters, \$4 each.

Canadian General Electric Co., 8 K-10 controllers, \$126.75 each; 4 choke coil cores, \$1 each; 4 sets of resistors for two motor equipment, \$32 each.

Northern Electric Co., no. 6 rubber covered double braid car cable copper wire,

\$44.40 per thousand feet. No. 4 rubber covered double braid car cable copper wire, \$60.30 per thousand feet. 1-0 rubber covered double braid car cable copper wire, \$132.80 per thousand feet.

Dawson & Co., Ltd., 4 coal burning forced ventilation car heaters, \$166.50 each. 4 21-E trucks, \$285 each.

Allen General Supplies, Ltd., 8 gears and pinions, \$48.45 each; 8 controller checks, \$9 each.

Dominion Wheel & Foundries, Ltd., 8 cold rolled steel axles, \$31.25 each.

Coleman Fare Box Co., Ltd., 8 stationary fare boxes, new type, \$50.10 each.

### Opening of the Electrified London and Port Stanley Railway.

The newly electrified London and Port Stanley Ry., a detailed description of which was given in Canadian Railway and Marine World for July, was opened for traffic July 1, when some 2,500 passengers were carried from London, and over 1,000 from St. Thomas to Port Stanley, in addition to local traffic along the line. No freight was carried during the day. The power machinery is reported to have worked very well, but some slight defects developed which required adjustment. To enable these adjustments to be made, steam was used for the operation of the line for a few days after July 1, and the electrical operation of the line was reported to be working reasonably satisfactorily July 8. Freight carrying was started July 2, and it was reported July 8, that it was increasing and was being handled expeditiously.

The work of electrifying the line was done under the direction of F. A. Gaby, Chief Engineer, Hydro Electric Power Commission of Ontario, the assistant engineers of the Commission employed being E. G. Hewson, electrical work; H. L. Bucke, track work; A. E. Davison, pole work; and E. Brandon, substations. D. M. Morrison was resident engineer in charge of the whole work, with office at St. Thomas.

The official opening of the line took place July 22, when a large number of guests attended on the invitation of the London City Council, Board of Trade and Public Utilities Commission. They were taken over the line from London to Port Stanley and return in the afternoon, and were then entertained at dinner in London.

**Bridge Repair Work in Vancouver.**—The ratepayers of Vancouver, B.C., defeated seven money by-laws, June 29, among them being one for the expenditure of \$65,000 for repairing and altering the Connaught Bridge, which was burned recently, and another for \$150,000 for the purchase of land to complete the Georgia-Harris Viaduct, which was formally opened for traffic July 1. The city council on July 2 authorized the making of temporary repairs at a cost of \$10,000. The work to be done includes an 18 ft. roadway and a 5 ft. sidewalk, no provision being made for electric railway tracks.

**Proposed Sale of the Detroit United Ry.**—The Detroit Street Railway Commission has been advised by the Detroit United Ry., that the draft of the proposed agreement whereby the city purchases the company's property within the one fare zone, is acceptable to the officials. On the acceptance of the contract by the commission, the company will obtain the necessary consent of the trustees for the bondholders to appear in the Chancery Court, to fix the price to be paid, presuming that the contract is accepted by the ratepayers. The commission has accepted the contract, and has given the company until Aug. 2, to obtain the ratification by stockholders, etc.



## Mainly About Electric Railway People.

Noonan Coryell has been appointed Master Mechanic, Moncton Tramways, Electricity and Gas Co., Moncton, N.B., vice A. R. McCharles, who has left the service.

H. A. MacLean has been appointed Accountant Moose Jaw Electric Ry., vice Captain C. E. McGee, who was killed in action May 24, as mentioned in our July issue.

Capt. N. C. Pilcher, General Manager, Sherbrooke Ry. & Power Co., Sherbrooke, Que., is in the 5th Mounted Rifles and is going to the front with the Canadian Overseas Expeditionary Forces.

F. T. Leversuch, heretofore Freight and Ticket Agent, Michigan Central Rd., Windsor, Ont., has been appointed Traffic Manager, London & Port Stanley Ry., London, Ont.

J. J. Callaghan, heretofore Superintendent of Transportation, Montreal & Southern Counties Ry., Montreal, has been appointed Manager of Operation, London & Port Stanley Ry., London, Ont.

W. O. LeBer, heretofore dispatcher, Montreal & Southern Counties Ry., Montreal, has been appointed acting Superintendent of Transportation, vice J. J. Callaghan, who has been appointed Manager of Operation, London & Port Stanley Ry.

C. E. A. Carr, railway supplies, etc., Toronto, formerly General Manager, Quebec Railway, Light, Heat and Power Co., received a cablegram from the British War Office, July 23, that his son, Private C. Clifton Carr, of the 3rd Battalion, Canadian Overseas Expeditionary Force, previously reported missing, but from whom he subsequently received a letter, had been officially reported as having died of wounds while a prisoner of war at Cassel, Germany. A dispatch states that the wounds consisted of a shattered thigh.

## Electric Railway Notes.

The Calgary Municipal Ry. is reported to have carried over 60,000 passengers on July 1.

The London & Port Stanley Ry. has received the Board of Railway Commissioners' approval of its standard passenger tariff on the basis of 2½¢. a mile.

The Public Utilities Commission in Port Arthur, Ont., has removed to new and larger offices in the Whalen Building, all its business now being transacted on the ground floor.

Owing to the increased cost of the Hydro Electric Power Commission of Ontario's power in St. Thomas, the cost of power for operating the St. Thomas St. Ry. increased from \$441 in May to \$647 in June.

The Sandwich, Windsor and Amherstburg Ry. has ordered two single truck city cars, with bodies 21 ft. long mounted on 21E trucks, 8 ft. wheel base, from Preston Car and Coach Co.

In a recruiting campaign inaugurated in Toronto during July, one of the Toronto Ry. cars was utilized. It was decorated with bunting, and bore a destination sign of Berlin and signs of various sorts to induce men to enlist.

The British Columbia Electric Ry. Co. entertained 150 delegates of the National Electric Light Association at Vancouver recently. The party left for San Francisco after the annual convention, and visited Vancouver in the course of a trip.

The Sandwich, Windsor & Amherstburg Ry. has ordered 2 single truck car bodies from Preston Car & Coach Co.; 2 trucks,

21E single, from G. C. Kuhlman Car Co.; and 4 no. 323 railway motors from Canadian Westinghouse Co.

Thirty of the Vancouver employees of the British Columbia Electric Ry. have been awarded "First Aid" certificates by the St. John's Ambulance Association local branch. The class was conducted during the winter by Dr. S. Paulin and Dr. W. Keith, who were, June 25, each presented with gold sleeve links by members of the class in recognition of their services.

The question of the best method of issuing transfers to passengers on the municipal railway is agitating the Calgary, Alberta, Commissioners. Several of them advocate the issue of transfers as passengers are getting on the cars, while Superintendent McCauley prefers the plan of issuing them as passengers leave. A report on experiences of both plans is being prepared.

The London & Port Stanley Ry. has received 5 steel motor cars, one baggage and express car 61¼ ft. long, one freight car and three trailer cars from the Preston Car & Coach Co. The interior finish of the trailer cars is of mahogany, with a seating capacity of 68. The cars are equipped with G.E. air brakes, G.E. multiple unit control, Tomlinson M.C.B. couplers form 12 draw bars. The trucks were made by the National Steel Car Co.

The Edmonton, Alberta, City Council recently gave Superintendent Larmouth a free hand in the management of the Edmonton Radial Ry. for a certain time. At the June meeting of the council a petition by certain residents on Namayo Ave. asked that Mr. Larmouth's decision not to stop at a certain corner be overruled, and the council requested the commissioners to discuss the matter with the Superintendent and see what could be done to meet the request.

The London St. Ry. is having two of its older type cars remodelled into p.a.y.e. cars by Preston Car and Coach Co., making them as nearly like the new cars added to the system recently as possible. The work involves the strengthening of the frames and new vestibules both front and rear. The company has 23 of these cars but it will not be decided until the testing of the two now being changed, whether the remainder will be so altered or not.

## Contracts for Toronto Civic Railway Equipment, Etc.

The Toronto City Council has awarded contracts for the Toronto Civic Ry.'s Danforth Ave. machine shop equipment tendered for recently. The contracts were divided among several firms. Following is the equipment ordered: Double back geared gap lathe, belt driven, with a swing of 44 ins. in the gap, 28 ins. over the shears, 20 ins. over the carriage and 14 ins. over the face plate, with a bed about 14 ft. long to admit 8½ ft. between centres. Wheel press, 150 tons capacity, to be used with 33 in. wheels and axles, with 5½ in. wheel seats. Double back geared shaper, to plane not less than 24 in. face. Double back geared radial drill, 3½ ft. clear arm, belt driven. Double back geared upright drill to drill up to 1½ in. holes, belt driven. 3,000 lb. portable crane. Double emery stand, for 12 x 2 in. wheels. Vise. 16 in. hack saw. 35 h.p. constant speed induction motor, 550 volts a.c., 3 phase, 25 cycles, 720 r.p.m.

The City Council has awarded the contract for the sweeper for the St. Clair Ave. line, for which tenders were invited recently, to the C. E. A. Carr Co., Toronto, agents for a United States manufacturer.

## Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry., and allied companies.

	May 1915	May 1914	July 1, 1914 to July 1, 1915	July 1, 1913 to July 1, 1914
Gross earnings	\$512,568	\$678,314	\$6,808,470	\$4,128,904
Expenses	488,854	505,640	5,499,897	5,931,407
Net earnings	23,714	172,674	1,308,573	2,197,497

### Cape Breton Electric Co.

	May 1915	May 1914	May 31, 1915	May 31, 1914
Gross earnings	\$26,611.66	\$29,485.78	\$127,765.12	\$137,624.78
Expenses	16,410.80	16,095.03	80,255.15	83,483.38
Net earnings	10,200.86	13,390.75	47,509.97	54,141.40

**Detroit United Ry.**—The City Council of Detroit, Mich., has approved of an agreement with the D. U. R. directors for the purchase of the line, at a price to be fixed by the judges of Wayne County, Mich., to be paid by the city assuming mortgages to the full extent of its borrowing powers, that is, 2% of the total value of the taxable property within the city limits, and by a sinking fund to be provided out of the line's earnings. It is estimated that the lines represent a value of \$25,000,000, and that the 2% on the city property will represent \$16,000,000. The D. U. R. directors issued a letter to shareholders, July 14, advising the acceptance of the agreement. They will meet Aug. 2, to consider the question.

**Saskatoon Municipal Ry.**—Receipts for June, \$8,843.71 against \$13,303.66 for June 1914. Operating expenses \$9,931.33 and \$10,874 respectively.

**Toronto Civic Ry.** The City Works Commissioner states that the receipts for the current year from the various lines operated by the city have increased over the same period last year by about 25%, chiefly due to passengers using the cars more in the middle of the day.

**Toronto Ry., Toronto and York Radial Ry.** and allied companies.

	May 1915	May 1914	May 31, 1915	May 31, 1914
Gross earnings	\$705,262	\$871,793	\$4,022,505	\$4,163,988
Expenses	420,459	449,627	2,152,304	2,169,106
Net earnings	374,803	422,166	1,870,201	1,994,882

The receipts of the Toronto Ry. from Jan. 1, and the percentages paid to the city, for 1915, compared with those for 1914, are as follows:

	1915	City percentage	1914	City percentage
Jan. ....	\$ 471,226	67.486	\$ 501,844	75.277
Feb. ....	440,314	67.047	461,274	72.060
Mar. ....	488,468	93.141	530,751	102.159
Apr. ....	467,702	93.540	501,435	100.287
May ....	468,953	93.790	534,465	106.893
June ..	450,582	90.116	525,038	105.106
	\$2,787,245	\$508,120	\$3,054,802	\$561,773

### Winnipeg Electric Ry.

	May 1915	May 1914	May 31, 1915	May 31, 1914
Gross earnings	\$263,302	\$337,664	\$1,496,707	\$1,756,536
Expenses	176,552	189,643	959,808	1,026,132
Net earnings	86,750	148,021	536,999	730,407

**The Winnipeg, Selkirk and Lake Winnipeg Ry. Co.** is a subsidiary of the Winnipeg Electric Ry. Co., and operates a line from Winnipeg to Selkirk, Man., 22.13 miles, with the Stony Mountain branch, from Middlechurch to Stonewall, 24 miles. It had outstanding, June 30, 1914, \$111,500 in stocks, and \$400,000 in bonds. The bonds were issued in 1908, redeemable in 30 years from their date, and bear 5% interest.

Under an order issued by the Manitoba Public Utilities Commission, July 10, the Company is authorized to issue bonds for \$1,400,000. It is said that the present outstanding bonds will be amalgamated with the new issue, and that the balance will be used to repay to the Winnipeg Electric Ry. Co., the \$980,000 advanced for construction of the Stony Mountain branch and other purposes. The order provides that it is subject to the shareholders' approval; that the new bonds shall not be sold at less than 85% of face value, and that the company account to the Commission for the disposition of the proceeds.



# Marine Department

## The Question of Tonnage for Export Trade.

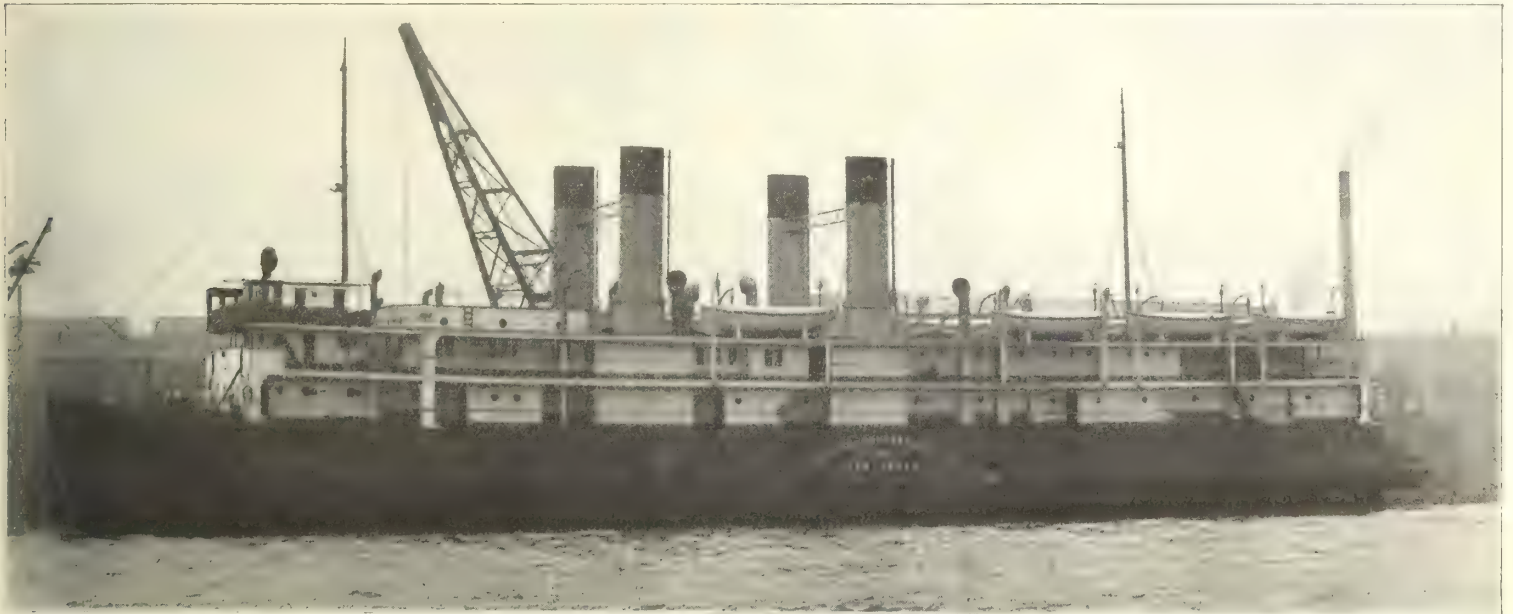
One of the most serious problems which the Dominion Government has under consideration, and which is one of the matters that Premier Borden will take up with the Admiralty and the home authorities, is that of the shortage of ocean tonnage and the tying up of the Canadian export movement. The impending harvest in Canada, and the necessity of moving the immense crop which at present is expected, brings the problem more forcibly to the front, and makes its solution a matter of pressing importance. The general export business of the country has been hampered seriously for the past 10 months, owing to the shortage of ocean tonnage both on the Pacific and the Atlantic, though exporters have shown an inclination to take the situation philosophically and to resign themselves to the inevitable loss of business. In

Canada, but South Africa, Australia, New Zealand and all the British possessions, also suffer. While German shipping has been driven from the seas, there is a very large German tonnage locked up in United States ports, which before the war was plying on the trade routes of the world. Neutral shipping is also to some extent seriously hampered. A number of prize vessels have, it is stated, been placed at the disposal of shippers in Great Britain, but these are not many. In response to the urgent demand for ocean tonnage many of the steamships formerly engaged on the Great Lakes have taken to the Atlantic.

At best, the movement of the 1915 grain crop under present conditions of scarcity of tonnage must be slow. There is a capacity of 168,000,000 bush. in Canadian elevators which, to a great extent, will take care of the storage of the crop, but there is only a capacity of 29,250,000 bush. in the elevators in the eastern inspection division, including Montreal, with a capacity of 7,400,000 bush.,

the available tramps pressed into the service. These latter are already reaping a rich harvest, and ocean freight rates are up all around.

The increased insurance rates, on account of war risks, are comparatively light as contrasted with the boost in the freight rates following decreased supply and increased demand for shipping. If the ocean freight rates go still higher it is not improbable that joint action will be taken by the Imperial and Canadian Governments to requisition all the available freighters for the handling of food exports from Canada at fixed freight rates, with the Governments assuming all risks of loss. Sir Robert Borden will spend at least part of his time while in England in discussing the question with the Admiralty and the British Board of Trade. In the meantime transportation and business interests are endeavoring to co-operate in looking for a solution of the problem.—Ottawa correspondence Toronto Globe.



Car Ferry Steamship Prince Edward Island, for service between Cape Tormentine, N.B., and Carleton Point, P.E.I.

the movement of the new crop this autumn the railway systems, the shipping interests, the financial concerns, and, in fact, the whole Dominion, are vitally interested. The total yield of wheat in Canada last year was 158,000,000 bush., and this year, with an estimated increase in the acreage of 25%, and with generally good prospects for an increased yield per acre, it is estimated that the crop will not fall far short of 250,000,000 bush. In the United States it is estimated that there will be 100,000,000 bush. more than last year. It will therefore be seen that a very considerable increased tonnage will be required to carry the exports of the two countries.

Much of Canada's shipping is now engaged on the King's business, having been taken over by the Admiralty for purposes of transport, etc. A tremendous amount of tonnage formerly available for ocean freightage is carrying troops to the various theatres of war, to the Dardanelles, to France, and from Canada to England. Other ships are engaged in the carriage of ammunition, army stores, horses, hay and fodder, etc., so that a comparative few are available for the ordinary export business of the Dominions. In this respect not only

so that unless export is freer than it is at present the crop will have to be moved very gradually from the west. This in itself, however, is not regarded as an un-mixed evil, since a gradual movement, from the financial viewpoint, is perhaps better than a rush during a month or so.

The cry for ships has been incessant for some months past, and both the export and import business have been seriously hampered by lack of ocean shipping facilities. There are hundreds of ocean steamships which were formerly available, but which are now being used exclusively for war purposes, some of them being kept as prison ships in England. When the crop movement starts it will take several hundred vessels to handle Canada's wheat exports alone, with a similar increased demand from the United States. It is not improbable that there will be serious congestion of wheat at the ocean terminals by the end of September, and in consequence the rail movement to the east will be held up. That may bring about a glut of wheat on the western markets and a consequent big drop in price, unless the Government succeeds in its present efforts to have some of the ships now on war service released, and all

## Car Ferry Steamship for Prince Edward Island Service.

The car ferry steamship Prince Edward Island, for service between Cape Tormentine, N.B., and Carleton Point, P.E.I., arrived at Halifax, N.S., July 4, having sailed from Newcastle, Eng., June 24. The voyage across, under Capt. W. Manning, was accomplished in complete safety and without incident or accident.

Her dimensions are, length overall 305 ft., breadth 53 ft. 10 ins.; draught 18 ft. On this draught she will carry a full complement of 10 freight cars, or 6 passenger cars, about 150 tons of coal and general stores. One of her features is the provision of a forward propeller, which it is considered will be of considerable use on account of the manoeuvring necessary through ice at the landing points. The accompanying illustrations show the vessel complete, prior to leaving England, the bow, and also the car deck. Complete descriptions of the vessel, with plans and profile, were given in Canadian Railway and Marine World for Sept., 1913, pg. 444, and Nov., 1914, pg. 518.



## Grounding of the s.s. Romney.

A formal investigation was held at Quebec, June 29, by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. J. A. Murray, harbor master, Quebec, and Capt. F. Nash, Montreal, as nautical assessors, into the causes of the grounding of the British s.s. Romney on Green Island reef, in the St. Lawrence River, June 24.

The master, Thomas Moss, stated that the Romney is a single screw, steel built vessel, of 2,316 tons net, with triple expansion engines, capable of a speed of 11 knots, carrying a crew of 56 all told, and is provided with all the necessary navigation instruments, including four compasses, one

Jules Lamarre stated that he had been a Quebec branch pilot for some 12 years, having had but one accident previously, which was not made the subject of an investigation, as it was trivial. He had piloted the Celtic King down the day before and landed at Father Point on June 23, and attempted to rest, but owing to pains in his legs could not obtain any sleep. The same evening he took charge of the s.s. Romney, and steered the usual courses to Bic, and after passing that point shaped a course s 67 w, which in ordinary circumstances would lead him between Red Island lightship and Green Island. He saw a light half a point on his starboard bow, but could not distinguish its character, owing to the smoke from the ship obliterating its brilliancy, the wind being aft, or a little on the port quarter. The lookout reported breakers ahead, the helm was put hard astarboard, engines ordered full speed astern, and the ship grounded. Prior to this, he assumed that the light in sight was the lightship, but did not make sure by means of the glasses, that such was the case.

Upon being recalled, in answer to a question from the court if it was not the case that he was asleep, or sleepy from the time he saw the light, he replied that such was the case, and that he had pains in his head, reiterating that he had no rest the day before.

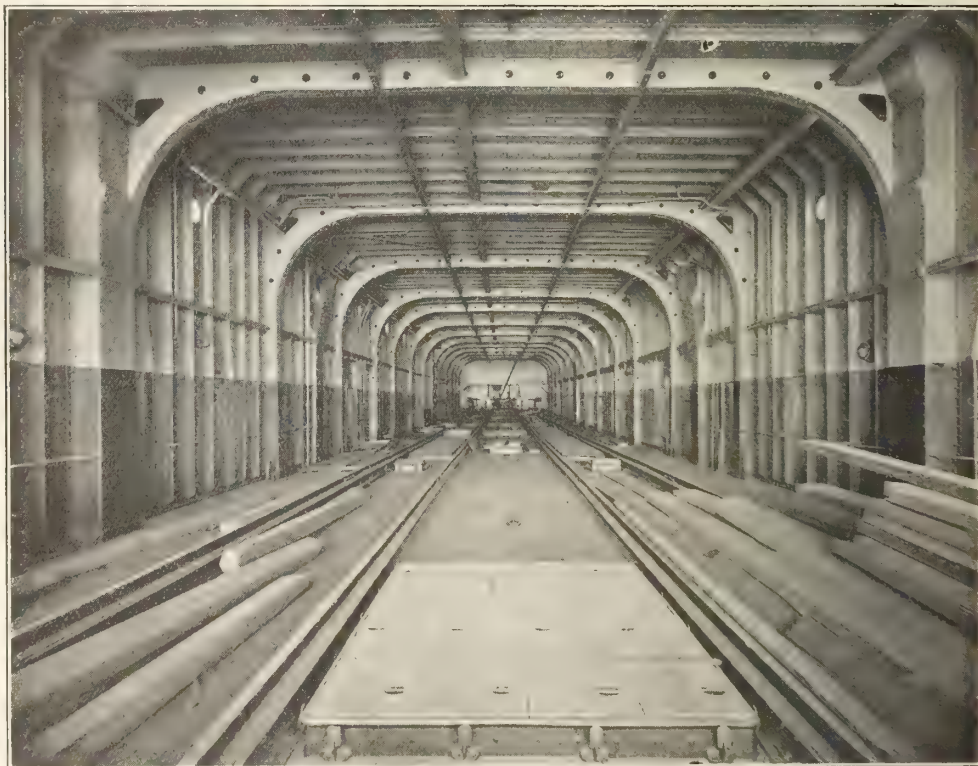
The lookout man averred that he reported

respect to the pilot, Jules Lamarre, the court cannot,—in view of his evidence, and admission that he might have been drowsy or sleepy at the time, due to lack of sleep the day before, occasioned by pains in his legs,—exercise any leniency. Though many years a pilot, he evidently has not yet realized the extent of the responsibility he assumed when taking charge of a ship. We claim that it was his duty to inform the master of his temporary physical disability. Had he done so, it is not probable that the master would have left the bridge. We assume, and rightly so, that the statement that the smoke obscured the light is but an excuse, and not a valid one. We know that there are intermissions in the emission of smoke from the funnel, and during those intervals the light must have been visible sufficiently to show the difference between the light exhibited on Green Island and the one on the lightship, or on Red Island, each one of which is of a different type. Accepting the evidence adduced that the lightship and Red Island lights were not visible, owing to mist, the difference in the exhibition of those lights and their character is great enough to observe in a moment, especially in the almost normal climate conditions which existed that night, lights being seen at a distance of four miles. We cannot conceive for a moment how such a mistake could be made by any one, unless under aberration, momentary or otherwise, or whilst under a sleepy spell, the pilot having admitted being in the latter state. Leniency is out of the question, and there-



Bow of Car Ferry s.s. Prince Edward Island, just before launching.

of which is of Lord Kelvin's make, upon which there is very little deviation. From the time he left Liverpool he encountered more or less misty, thick weather. During the 10 days crossing until Sydney was reached, he had scarcely any rest, all hands having been kept on the alert while the vessel was in the war zone. After leaving Sydney, where he had gone to bunker, he encountered misty weather. He first sighted Cape Gaspé, then Cape Chatte, and finally made Father Point. He was on the bridge constantly during this time, and after having boarded the pilot, and passing Bic Island, he left the bridge about 11.30 p.m., after having given verbal orders to be called if the weather became thick or misty. He did not retire to his room until 12.30, the weather being then overcast, with fresh wind from a northeasterly direction. He had informed the pilot that on the course s 67 w there was but one degree of deviation, which was not worth considering. He was awakened by the ship striking, and rushed up on deck, and found that orders for the engines to be put full speed astern had been given by the pilot, but notwithstanding this the ship remained fast. The tide was then ebbing, and soundings were immediately taken, and a call for assistance was sent by wireless, and the s.s. Lady Evelyn arrived and made efforts to pull the vessel off without success, until that night, when the ship was floated at high water, and proceeded to Quebec.



Car deck on Car Ferry Steamship, Prince Edward Island.

two small lights indistinct on the starboard bow, then another nearer ahead on the starboard side, then two lights which he assumed were lanterns, on the shore. The quartermaster said the ship steered well, and he showed such remarkable memory for details that the court did not attach much importance to his statement.

The court finds that Capt. Moss has given satisfactory reasons and explanations for his absence from the bridge prior to and up to the moment of the accident, and therefore exonerates him from blame. With

fore, for his lack of attention to duty, which has caused a loss of thousands of dollars, we suspend Jules Lamarre's pilot's license for six months, from June 29 to Dec. 29, and further order him to pay \$100 towards the costs of the investigation. With regard to second officer Cooper, we find that he showed a marked indifference in the navigation of the ship. His orders were to call the master if it became thick or hazy. If the character of the light could not be discerned owing to smoke obscuring it, we are of opinion that it was his right and duty to



advise the master, further, when such a condition existed, and he should have shown sufficient interest to refer to the chart or sailing directions, as, had he done so, he could have pointed out to the pilot that he was piloting the ship into danger. It is in such a time as this that the officer on duty should assure himself that the pilot is right, besides increasing his knowledge of the conditions existing in the waters he is called upon to navigate. We repeat that second officer Cooper has shown an extraordinary and most lamentable indifference in the accomplishment of his duties, and while we will not deal with his certificate, we severely reprimand him, and caution him to be more careful in the future and exercise that intelligence and caution which every master expects from those he entrusts with navigational duties. This court points out that in dealing apparently in a lenient manner with the second officer, it recognizes the peculiar situation created by the war, which has reduced the number of officers available to a minimum, therefore causing untold delay to vessels carrying out their schedule.

### Suggested Customs Officer in New York for Canadian Shipment via Panama Canal.

A proposal is under consideration by the Dominion Government, at the instance of eastern members of the Canadian Manufacturers Association, to appoint a customs officer in New York, so that Canadian manufactures may be shipped to the Pacific coast via New York and the Panama Canal. When a deputation waited on the Premier at Ottawa recently, it was pointed out that in certain manufactures Canadian eastern makers, by having to ship to the Pacific coast by the all rail route, could not compete with U. S. eastern manufacturers who could send by the Panama Canal route at much cheaper rates. The Premier was understood to say that if certain products were to move to the Pacific coast via New York, which at present had no movement, it would follow that manufacturers would be sending other products by that route which now move by the all rail route, and this would be to the detriment of Canadian railways. He promised that the point would, however, receive careful consideration. S. R. Parsons, Chairman of the Transportation Committee of the Canadian Manufacturers Association, has since stated that the matter is becoming somewhat involved in that Canadian railways have in some instances been making low commodity rates in order to meet, as far as possible, the competition via New York, and it is understood that they are giving further consideration to the matter. On the other hand, owing to the scarcity of steamships, freight rates via New York to Pacific coast points have advanced considerably.

**Cruiser Sterns on Merchant Vessels.**—A correspondent of a New York shipping paper objects to the use of the words cruiser stern, which have been applied to the design of a stern which is being applied to certain vessels in Europe, and which it is said is likely to be copied on this continent. The paper states that cases where the real cruiser stern is applied to merchant vessels are very rare; the only correct ones so built up to the present are the C.P.R. steamships Empress of Russia, Empress of Asia, Metagama, Missanabie and Princess Irene, and the Allan Line steamships Alsatian and Calgarian. The C. P.R. s.s. Princess Margaret, a sister vessel of the Princess Irene, should be added to the list.

## Shipping Letters From the Head of the Lakes.

F. and W. Jones, brokers, Fort William, Ont., have issued weekly letters as follows:

**July 3.**—Coal receipts this week show an increase over last week—seven cargoes arriving—5 bituminous and 2 anthracite—only one cargo was carried in U. S. bottom. Four cargoes are reported en route, 3 for the Canadian Northern dock, 1 anthracite and 2 bituminous, and 1 vessel with both anthracite and bituminous will discharge part at the Canadian Pacific and part at the Canadian Northern. Car shipments to the west have also picked up considerably during the past week, dealers are now commencing to replenish their stocks throughout the west and it is expected that commercial coal will move somewhat more freely. The railways, however, are shipping only sufficient service coal to fill their actual requirements. This condition is likely to continue until cars are needed in the west to move the grain crop. Two cargoes of bituminous coal have been unloaded at Jackfish during the week, about 6,000 tons each. One cargo of ore (about 2,500 tons) was shipped this week to Cleveland. Stocks on the dock are estimated at about 6,000 tons, but no further charters are reported.

Lake movement of grain has continued steadily on about the same parity as the previous week, 928,486 bush. having been shipped east in 7 vessels, only 1 of which was U. S. bottom. This cargo was composed of flax and billed to Cleveland. Grain arrivals from the west are steadily declining and it is generally conceded that very little of the old crop is now left in the west to come forward. Total elevator stocks at the head of the lakes now stand at 4,754,865 bush., a decrease from the previous week of 447,121. It will thus be seen that with the lake movements steadily in excess of western arrivals the available stocks must soon be greatly depleted and the prospects of grain charters will lessen from week to week until new crop movement commences. The heavy rain storms referred to in our last week's letter and which was general over the western provinces, have continued in a modified form, accompanied by warmer temperature and more sun. There are no reports which would denote serious damage to the crops, at the same time it cannot be expected but that the continuous rainfall must have at least retarded advancement. The total result will probably be a greater percentage of lower grade grain and a setback in harvesting of possibly two weeks. From reliable sources it is computed that it will be some 2 weeks before the "ear" is developed, after which it will take about 4 weeks to ripen, thus bringing commencement of harvest up to second or third week in August. The grain movement should, therefore, be commencing well in advance of Sept. 1. It is still maintained that a full crop will be harvested equal to any previously known in Canada, even if it does not reach a bumper crop. The heavy floods which have been reported in the west are mainly confined to the city areas. Stocks on hand at date, receipts and shipments during the week are:

	Stocks.	Receipts.	Shipments.
Wheat .....	2,399,718	319,482	616,615
Oats .....	994,596	115,498	71,912
Barley .....	86,756	15,950	101,295
Flax .....	1,273,801	20,160	155,165

**July 10.**—Coal receipts this week show a slight increase over last week—9 cargoes arriving, 6 bituminous and 2 anthracite, and one part bituminous and part anthracite—4 cargoes were in U. S. bottoms and 5 in Canadian. One cargo of a U. S. steamship was discharged at two docks, part at the Canadian Pacific and part at the Canadian Northern. On Tuesday and Wednesday the Canadian Pacific worked on three steam-

ships. All vessels received good dispatch and in only one case was a steamship held over 12 hours waiting turn. Two cargoes are reported en route, both bituminous—one for the Canadian Northern, the other for Fort William coal dock. Shipments to the west were on the same parity as last week, there is no change in the western coal situation and there is nothing to indicate any immediate business activity.

No ore was shipped out this week. Considerable ore is on the dock ready for shipment and a cargo will probably go east next week. Contracts have been closed recently for the delivery of about 45,000 tons of steel rails. The first shipment is expected the latter part of next week.

There has been a marked decrease in lake shipment of grain from these points during the past week; 633,274 bush. have been moved in five Canadian steamships and four passenger vessels; three of the former were billed to Buffalo. Receipts from the west have been round the same parity for the past several weeks with sufficient weakening to show end of stocks in sight. The elevator stocks also show a decrease, the total of grain in all elevators being 4,665,857 bush. The rain storms mentioned in our last letter have abated and the floods are subsiding. Weather reports throughout the west are universally favorable, warmer temperature being general. Grain is reported as filling out rapidly and in healthy condition. It is remarkable that the heavy storms have done little damage, the only noticeable effect being a setback in the time of harvesting. The prospective figures are still from 200,000,000 to 250,000,000 bush. of all grains. Stocks on hand, receipts and shipments during the week are as follows:

	Stocks.	Receipts.	Shipments.
Wheat .....	2,429,777	354,267	324,208
Oats .....	941,014	148,528	206,855
Barley .....	103,951	17,203	8
Flax .....	1,191,115	20,516	103,203

**July 16.**—Coal receipts fell off again this week—five cargoes arriving—all bituminous and all in Canadian bottoms. Four cargoes are reported chartered or en route, three anthracite and one bituminous. Two of these are in U. S. bottoms. Shipments to the west still remain light and the coal situation is unchanged. One cargo of about 2,500 tons of ore was shipped this week. There is still considerable ore to come down from the mines but no further charters are reported.

Grain shipments took a big jump this week, 10 cargoes (aggregating 1,243,801 bush.) going east. All were in Canadian bottoms, one cargo of about 100,000 bush. of wheat was to Buffalo. Receipts also show an increase of about 181,822 bush. over last week, but owing to the heavier shipments stocks have decreased, the total of grain in all elevators being 4,044,390 bush. Crop reports for the past week covering the three prairie provinces are very satisfactory, the weather for the most part has been warm and bright with sufficient rain to keep up the supply of moisture. A number of samples have been sent in from Southern Manitoba districts and examined by experts who state they are well satisfied with the appearance and predict better than an average crop. The Department of Agriculture reports conditions in both Saskatchewan and Alberta as excellent, in Southern Alberta some early sown wheat is as high as 42 to 44 ins., showing every indication of a good yield. It is expected that cutting of fall wheat will commence early in August. Stocks on hand, receipts and shipments during the week:

	Stocks.	Receipts.	Shipments.
Wheat .....	2,168,304	442,578	703,990
Oats .....	607,321	148,003	481,571
Barley .....	67,817	18,296	15,175
Flax .....	1,200,678	12,739	3,176



### Canadian Vessel Statistics for 1914.

The total number of vessels on the Dominion register at Dec. 31, 1914, was 8,772, measuring 932,422 tons, being an increase of 227 vessels and 35,457 tons over 1913. The number of steamships on the register was 4,054, with a gross tonnage of 744,783, which, at an assumed average value of \$30 a ton, shows the value of the net registered tonnage to be \$24,972,660. The number of new vessels built and registered in the Dominion in 1914 was 327, measuring 43,346 tons, which at an assumed value for new tonnage of \$45 a ton, gives the value of \$1,950,570. During the year 212 vessels were removed from the register. It is estimated that 45,163 persons were employed on vessels registered in the Dominion during the year.

The number and tonnage of vessels, according to provinces, are as follows:

	Sailing ships and Steamships.	Steamships.	Gross tonnage of Steamships.	Net tonnage of sailing ships and Steamships.
Ontario .....	2,100	1,492	337,668	314,660
Quebec .....	1,663	590	177,958	259,143
British Columbia .....	1,591	1,173	131,550	147,192
Nova Scotia .....	2,098	416	47,580	135,052
New Brunswick .....	1,052	253	33,106	55,522
Prince Edward Island .....	149	26	4,760	10,029
Manitoba .....	103	90	8,785	7,999
Yukon .....	11	10	2,716	2,295
Saskatchewan .....	5	4	660	529
	8,772	4,054	744,783	932,421

Ports of registry are distributed as follows: Ontario, 38; Nova Scotia, 21; New Brunswick, 7; Quebec, 6; British Columbia, 4; and Manitoba, Saskatchewan and Yukon, one each. No provision is made for the registry of vessels in Alberta. The new vessels built during the year, according to provinces, are as follows:

	Number.	Net tonnage.
Ontario .....	78	23,167
Quebec .....	51	6,753
British Columbia .....	97	5,867
Nova Scotia .....	56	3,303
Manitoba .....	11	2,899
New Brunswick .....	31	1,319
Prince Edward Island .....	2	35
Yukon .....	1	3
Saskatchewan .....	..	..
	327	43,346

Of the 212 vessels which were removed from the register during the year, 86 were broken up, reported out of existence, condemned, dismantled, abandoned, etc.; 27 were sold to foreigners; 17 were burnt; 17 were wrecked; 14 foundered; 12 stranded; 11 were lost; 8 were abandoned at sea; 7 were transferred to Newfoundland; 7 were transferred to Barbadoes; 2 were transferred to Great Britain; 2 were reported missing; 1 was lost in a collision, and the registry of 1 was closed on the ground that it was no longer required. In a list of the tonnage of each of the maritime countries of the world, Canada takes tenth place, but her tonnage is included with that of Great Britain, which is shown as 13,320,493, more than the aggregate tonnage of the next seven countries. A comparison of the building of new tonnage in Canada during the past 40 years gives some interesting results, which in view of the suggestions made recently by shipbuilders in the Dominion regarding Government subsidies for the trade, may serve some purpose. In 1874, 481 vessels were built, having a total tonnage of 183,010, an average tonnage of 380, while in 1914, 327 vessels were built, with a total tonnage of 43,346, an average of 133 tons. In 1874 the chief vessel building was done in the Maritime Provinces, with Nova Scotia leading, whereas in re-

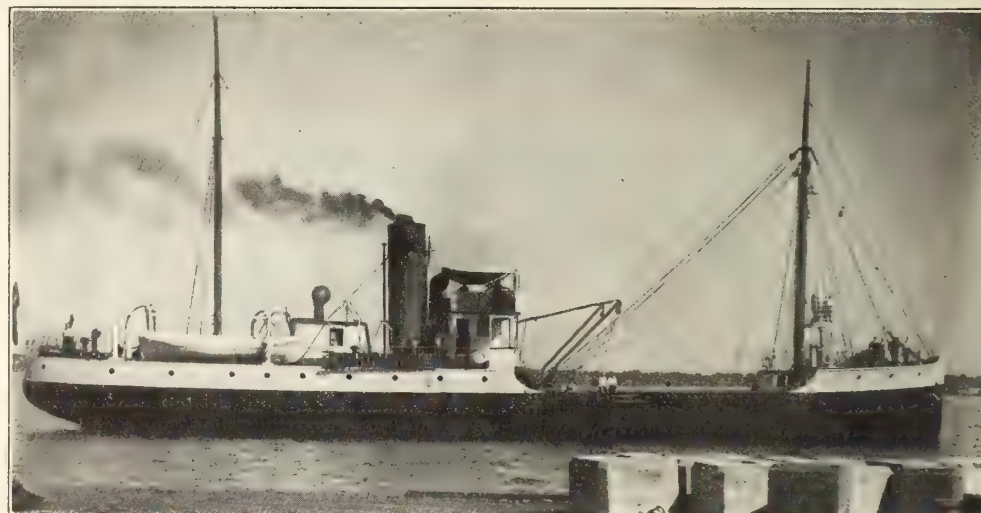
cent years Ontario has taken the lead in the amount of new tonnage, the amount for 1914 being the highest, but it is little more than a quarter of the tonnage built by Nova Scotia in 1874. The total number of vessels on the Canadian register in 1874 was 6,930, with a tonnage of 1,158,363, compared with 8,772 vessels and 932,422 tons

### Dominion Government s.s. Grenville for Buoy Work in St. Lawrence River.

The s.s. Grenville, a buoy tending steamboat for the Dominion Government, placed in service recently on the St. Lawrence River, with the station at Prescott, Ont., is illustrated herewith. This vessel was described in detail in Canadian Railway and Marine World for Dec., 1914, shortly after launching. The following are the principal dimensions:

Length between perpendiculars .....	155 ft.
Length overall .....	164½ ft.
Breadth moulded .....	30 ft.
Depth moulded .....	13 ft.
Draught, loaded with 183 tons .....	9½ ft.
Coal bunker capacity .....	100 tons
Complement, officers and men .....	24

The vessel is of steel construction throughout, built under the government



Dominion Government Buoy Tending Steamship Grenville.

survey, to be classed as 100 A1 at Lloyd's. She has six main transverse watertight bulkheads—a watertight bulkhead at the bow and stern with bulkheads adjoining forming trimming tanks. She is engined with a 14 x 22½ x 38 x 24 in. 900 i.h.p. reciprocating engine, with two Scotch boilers. She was built by the Polson Iron Works, Toronto.

### Vessels for Hudson Bay.

St. John's, Nfld., press dispatch, July 18.—In order that the proper kind of lumber for the construction of piers and docks may be available at Port Nelson, where the Canadian Government is building a railway and steamship terminal on the shores of Hudson Bay, it has been found necessary to send a steamship around the greater part of North America. The Durlay Chine, which left Vancouver, B. C., June 30, will cover approximately 10,000 miles to land her cargo of Douglas fir at Port Nelson, which is only about 1,200 miles distant from Vancouver in an air line. Her route lies down the Pacific coast, through the Panama Canal, up the Atlantic coast to Newfoundland, and thence into Hudson Bay. In preparation for this season's work at Port Nelson, a fleet of vessels is fitting out at St. John's. Most of these

are sailing vessels, equipped for service in stormy and ice frequented water. Some of them will be used directly by the Canadian Government for the transport of men, construction material and food supplies. Others are engaged by the fur companies for the collection of last winter's accumulation of peltries along the Labrador and Hudson Bay coasts.

### Toronto Harbor Improvement Works.

The Canadian Stewart Co., general contractors for the various works in progress in the Toronto harbor, by the Dominion Government and the Toronto Harbor Commissioners, announced July 19, that work on certain of the sub contracts had been stopped temporarily pending their rearrangement. Local reports state that complaints have been made regarding the manner in which some of the work done under sub contracts has been done, and that a number of inspectors acting under the Dominion Government have been dismissed. The Canadian Stewart Co. is reported to have stated that about 20% of the sub contracts have been completed, and that the complaints made refer to about 2% of the com-

pleted portion. If the sub contractors failed to make this good, the general contractors will do so.

One of the Toronto Harbor Commissioners, is reported to have said that Government work in connection with the harbor development scheme had not been accomplished to the Government engineer's satisfaction and the result is that the inspectors had been instructed to cease work until a readjustment can be made. The imperfections were found before they were irreparable, and would be made good by the contractors.

Press reports state that the Government has appointed E. L. Cousins, Engineer, Toronto Harbor Commissioners; Engineer Sweeney, of the Public Works Department at Winnipeg; and Roger Miller, Toronto, to go over the entire work and submit an estimate of the cost of reconstruction. In the meantime the Canadian Stewart Co. is holding the subcontractors' plants.

The C.P.R.'s New York Passenger and Ticket Office has been removed from 450 Broadway to 1231 Broadway, corner of 30th Street, which is more central than the old office. The downtown office is being maintained at 1 Broadway and the freight office as usual in the Woolworth Building.



### Atlantic and Pacific Ocean Marine.

The Cairn Line, which operates a number of steamships between England and Canada, has paid an interim dividend of 10% against 2½% last year.

It is announced that the British Admiralty has placed a large order for British Columbia lumber, and that vessels have been arranged for its transportation.

The Osaka Shosen Kaisha s.s. Chicago Maru, bound from Hong Kong, China, to Victoria, B.C., which struck a rock near Shanghai recently, proceeded to Kobe for repairs.

It is announced that the Danish steamships calling at Vancouver will increase their sailings from six to 11 in August, on account of increased lumber and shingle exports from British Columbia.

The s.s. Cheltonian, which stranded near Cape Ray, Nfld., May 23, and which was docked at Halifax, N.S., for examination, will, it is said, be repaired in New York, the amount involved approximating \$100,000.

The British s.s. Anglo-Californian, bound from Montreal to Europe, with horses and war supplies, was shelled by a German submarine early in July, and the captain and 11 of the crew were killed. The vessel was eventually taken into Queenstown, Ireland.

It is reported that the Scottish Co-operative Wholesale Society sent representatives to the Pacific coast recently to make arrangements for the shipping of Canadian grain to Great Britain by the Panama Canal route.

The s.s. Durley Chine sailed from Vancouver, B.C., June 30, with Douglas fir for the Dominion Government dock and terminal work at Port Nelson, Hudson Bay. She will travel by way of the Panama Canal and Newfoundland.

The British s.s. Carisbrook, which was sunk by Germans, off Kinnaird Head, Scotland, recently, while bound from Montreal to Leith, Scotland, with war supplies, was owned in Glasgow, and was insured for £23,500. She was built in 1907 and was 2,352 tons gross.

The s.s. Morwenna, which was owned by the St. Lawrence Shipping Co., Montreal, and which was sunk by Germans in June, when bound in ballast from Cardiff, Wales, to Sydney, N.S., was insured for £30,000. She was built in 1904, and was 1,414 tons gross.

A dispatch from Denmark states that the Hamburg-American Line has made a declar-

ation of bankruptcy, and a similar declaration by the Norddeutscher Lloyd is expected shortly. Both of these companies have suffered severely from the war, all of their vessels having been tied up in neutral harbors, chiefly in the United States.

The shareholders of the Suez Canal Company, which is under British control, are being asked to bring to an end the term of service of the only German director on the board, who is also a director of the North German Lloyd.

The British s.s. Romney, which was stranded on Green Island reef in the St. Lawrence River, June 24, while bound from Liverpool to Montreal, is being repaired by the Davie Shipbuilding Co., Levis, Que. She is owned by F. Bolton and Co., London, Eng., and was built in 1903. She is 2,806 tons gross and insured on a value of £13,000.

The Osaka Shosen Kaisha s.s. Seattle Maru, which arrived at Victoria, B.C., early in July, had a cargo of silk valued at \$500,000. The company has launched recently another vessel named Hawaii Maru, of 100,000 gross tons, and a speed of 17 knots an hour. She will be operated between Hong Kong, China, and Puget Sound ports.

The C.P.R. and Allan Line are reported to have taken a considerable amount of business lately on a time charter basis, and are said to be looking out for other vessels of large size and good speed for their various requirements. It is stated that the rate of freight current for this time business is 15c. 6d. a ton dead weight for six months or longer.

Navigators are warned that obstructions have been placed in Queenstown harbor, Ireland. For safety of navigation, two trawlers are moored midway between Corkbeg and Spike Island. Pilotage is compulsory for all vessels without exception between the examination anchorage and the outer man-of-war anchorage and vice versa, and all vessels must pass between the trawlers passing directly up and down the harbor. No vessels must pass each other when approaching or passing the trawlers.

The Atlantic Transport Line s.s. Minnehaha, which was reported to be on fire at sea, when en route from New York to London, put back to Halifax, N.S., July 9. The fire was confined to one of the holds, and was believed to be the result of an explosion. It was soon extinguished, without great damage having been done, but owing to the quantity of explosive material aboard, it was not deemed safe to allow the vessel to go up to the usual landing piers.

The report of Lord Mersey, appointed by the British Government to enquire into the sinking of the Cunard Line s.s. Lusitania by the Germans, whereby a large number of lives were lost, exonerates the company and the officers of the vessel from any blame, and places it solely on those who plotted and those who committed the crime. There was possibly a tendency to attach some blame to the captain, owing to the exercise of his judgment in carrying out certain Admiralty orders, but Lord Mersey states that the Admiralty advice was not intended to deprive the captain of the right to use his judgment, and his omission to follow the advice strictly cannot fairly be attributed either to negligence or incompetence.

### Maritime Provinces and Newfoundland.

The St. John, N.B., schooner William B. Herrick, bound to Newport, Eng., was towed into Berehaven early in July, with her rudder broken.

The s.s. Bellaventure, under charter to the Dominion Government, sailed from Halifax, N.S., early in July for Port Nelson, Hudson Bay, with supplies and materials, and also a number of dock laborers.

The Dominion Government s.s. Sheba, which arrived at Halifax from Sydney, N.S., July 11, with coal for the Dominion Coal Co., left later in the month for Florida to load lumber for Port Nelson, Hudson Bay.

The Russian Government is reported to have purchased the ice breaking steamship Bruce from the Reid Newfoundland Co. for service at Archangel. This is the second of the company's vessels which have been acquired for the service named.

The Department of Naval Service is negotiating for the services of a strong wrecking tug for service on the Atlantic coast. It must be not less than 100 ft. long, equipped with powerful winches, salvage and fire pumps and derrick of not less than 15 tons capacity.

The Eastern Steamship Co.'s s.s. Calvin Austin, while outward bound from St. John, N. B., to Boston, Mass., July 16, collided with the lighthouse tender Azalea, in St. John harbor. The reports state that she was practically undamaged, but that the Azalea had several feet of rail torn off and her steering gear damaged.

The car ferry Prince Edward Island, which is to be operated between Cape Tormentine, N.B., and Carleton Point, P.E.I.,

### List of Steam Vessels Registered in Canada During June, 1915.

No.	Name	Port of Registry	Where and When Built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Engines, Etc.	Owner or Managing Owner	
134,487	David Seath ..	Montreal .....	Montreal, Que. ....	1915	67 5	18 5	8 8	111	52	28 sc. .	Harbor Commissioners of Montreal, Montreal, Que.
137,892	Ear. Boss	Toronto	Wallaceburg, Ont. ....	1914	81 0	20 0	10 2	118	65	30 sc. .	J. A. Henning, Port Burwell, Ont.
134,545	Geo. W. Yates	Ottawa, Ont. ....	Greenock, Scotland. ....	1913	100 0	19 1	8 9	111	3	51 sc. .	Minister of Railways and Canals, Ottawa.
137,982	H. N. Jex	Kingston, Ont. ....	Cleveland, Ohio. ....	1868 1909	170 2	26 5	10 3	441	231	50 sc. .	J. F. Sowards, Kingston, Ont.
134,298	Harry A	Midland, Ont. ....	Midland, Ont. ....	1914	31 5	11 3	3 8	11	7	2 sc. .	J. M. Syer, Midland, Ont.

### List of Sailing Vessels and Barges Registered in Canada During June, 1915.

No.	Name	Port of Registry	Rig	Where and When Built	Length	Breadth	Depth	Reg. Tons	Owner or Managing Owner	
134488	Derrick No. 8	Montreal	Scow	Montreal	1915	90 0	31 3	6 4	282	Montreal Harbor Commissioners, Montreal, Que.
137573	Emily E. Selig	Lunenburg, N.S.	Schr.	Lunenburg, N.S.	1915	90 2	24 0	9 4	82	A. Selig, M.O., Volgers Cove, N.S.
134489	Floating Concrete Mixer	Montreal	Scow	Montreal	1915	101 2	34 8	5 0	308	Montreal Harbor Commissioners, Montreal, Que.
134439	G. of G. No. 1	Vancouver, B.C.	"	New Westminster	1909	70 0	26 0	6 8	113	Gulf of Georgia Towing Co., Vancouver, B.C.
134440	G. of G. No. 8	"	"	Vancouver, B.C.	1915	47 7	19 8	5 5	46	"
137591	J. W. Hennessy	Toronto	Dredge	Tonawanda, N.Y.	1908	96 0	20 0	5 6	238	Ottawa Contractors, Ltd., Ottawa, Ont.
134544	New Welland	Ottawa, Ont.	"	Kindereijk, Holland	1913	151 0	26 7	7 3	297	La Cie. Generale d'Enterprises Publiques Ltd., Levis, Q.
111906	Wiley M. Egan	Montreal	Barge	Cleveland, Ohio	1887	260 7	30 0	10 8	1577	Ontario and Quebec Navigation Co., Picton, Ont.

(1) Foreign name Niagara. (2) formerly a steamer.



The Intercolonial Ry. was given a series of test runs at Halifax, N.S., July 13. Trips were made in Bedford Basin and out to sea for about 20 miles, attaining a speed of 14.12 knots an hour.

The Dominion Government s.s. Minto and the auxiliary schooner Burleigh are announced to sail from Halifax, N.S., Aug. 1, for Hudson Strait. The schooner will proceed to Mansell Island, where a wireless telegraph station is to be established. The s.s. Minto will continue the work of attending the buoys and lights which she established in the strait last year.

It is announced that the Prince Edward Island Government has entered into an agreement with W. Macdonald, Sydney, N.S., for the operation of the s.s. Senlac on a regular route between Prince Edward Island and Newfoundland until December. The route is said to cover the following places, Summerside and Charlottetown, P.E.I., Sydney, N.S., and St. John's, Nfld., and if required, also Souris, P.E.I., and North Sydney, N.S.

The Dominion Coal Co.'s s.s. Cabot, while bound from Charlottetown, P.E.I., for Sydney, N.S., was sunk by the bursting of her water ballast tank. The captain and crew took to the boats and after 12 hours were landed at Hastings, N.S. The s.s. Cabot was built at Grangemouth, England, in 1907, and was screw driven by engine of 63 n.h.p. Her dimensions were, length 155.1 ft., breadth 25.1 ft., depth 9.7 ft.; tonnage 465 gross, 162 register.

The Canada Atlantic and Plant Steamship Co. is announced to have withdrawn its steamship service between Charlottetown, P.E.I., and Boston, Mass., owing to small bookings. The steamships Evangeline and Halifax were utilized on this service. Jas. Carragher, agent for the company at Charlottetown, is reported to have stated that he had received instructions to cancel all sailings of the company's vessels from the Island eastward, for the remainder of the season. It is suggested locally that the Government be asked to offer some inducement to the company to continue the service, at least to the end of the year. Efforts are also being made to get the local board of trade to take the matter up.

### Province of Quebec Marine.

Canada Steamship Lines s.s. Tadousac stranded in shallow water near Ste. Irene at the end of June, and was refloated the same day with trifling damage.

Canada Steamship Lines s.s. Quebec, while on her way to Quebec, July 6, grounded near Three Rivers during a gale, but was refloated the following day without damage.

### Ontario and the Great Lakes.

The Dredging and Drainage Co. of Ontario, Ltd., has changed its name to the Dredging and Dock Co., Ltd.

The U. S. Government has placed a horizontal striped gas buoy to mark the point where the wrecked s.s. Charles S. Price lies, in 60 ft. of water near Fort Gratiot light station, Michigan.

Canada Steamship Lines, Ltd., has placed an extra boat on its Toronto-Niagara route for its Sunday service, on account of increased traffic. Five round trips are now made each Sunday.

Canada Steamship Lines, Ltd., has secured supplementary letters patent amending the powers in its original letters patent by substituting a new clause respecting mortgages, bonds and debentures.

The C.P.R. has added verandah cafes to its steamships Assiniboia and Keewatin, and new smoke rooms to its steamships Alberta and Manitoba, and has also installed reading lights in every berth.

Mathews Steamship Co.'s s.s. Easton transported a cargo of 2,000 tons of iron ore from Marquette, Mich., to the Atlantic coast, recently, which is said to be the first cargo ever shipped direct to the coast from Marquette.

F. E. Hall and Co.'s s.s. Carleton was docked at Buffalo, N.Y., early in July for general repair and overhaul, after striking bottom in the St. Lawrence. It is stated that on completion of the repairs the vessel will sail for England.

The Algoma Central Steamship Line's s.s. Paliki is undergoing repair at Port Arthur, after sustaining bottom damage through grounding some time ago. She was expected to be ready for service early in August.

The s.s. Florence, owned by Sir John Eaton, Toronto, has been overhauled and painted grey, and has been taken to Quebec, where it is stated she will be used by the Government for patrol duty on the river and along the sea coast.

A new edition of Sailing Directions for Canadian Shores of Lake Huron and Georgian Bay has been issued by the Hydrographic Survey, Naval Service Department, and will be supplied to mariners free on application.

The Atlantic Steamship Co.'s s.s. International, which left the builders' yards at Detroit, Mich., July 6, arrived at Quebec, July 13, on her maiden voyage, with coal for the Nova Scotia Steel and Coal Co., and then loaded pulp wood at Gaspé for the return trip to Erie, Pa.

The Marine Department has placed a fixed white light on the steel frame work of the back range lighthouse tower, on the east side of Sydenham River at Owen Sound, until the original lighthouse which was destroyed by fire in June, has been replaced.

A press report states that the Dominion Government has awarded the contract for the transportation of the 1,000,000 bush. of wheat which it has purchased on behalf of the New Zealand Government, from the head of the lakes to Montreal, to the C.P.R.

Lake carriers, were asked by the Government to tender for this service, and it is stated that the tender of the C.P.R. was the lowest.

The s.s. Matoa, formerly owned by Pittsburgh Steamship Co., which was wrecked during the 1913 storm on the Great Lakes and subsequently purchased and repaired by the Reid Wrecking Co., Sarnia, was cut in two recently for passage through the canals, and has been sent to the coast for service on the Atlantic.

A lighthouse and fog bell have been established on a pier in 18 ft. of water in the Detroit River at the head of the Livingstone Channel, about 200 ft. south of the intersection point of the east edge of the Livingstone channel and the west edge of the Ballard Reef channel. The light, which is alternating white and red for 10 and 5 seconds respectively, is 42 ft. above water level, and is visible at 8 miles from all points of approach. The fog bell, which is operated by machinery, gives one stroke every 5 seconds. The gas buoy 79D at the junction of the two channels has been removed.

The U.S. Lake Survey reports the levels of the Great Lakes in feet above tide water, for June, as follows: Superior, 601.95; Michigan and Huron, 579.78; Erie, 571.86; Ontario, 245.12. Compared with the average June levels for the last ten years, Superior was 0.32 ft. below; Michigan and Huron, 1.20 ft. below; Erie, 1.11 ft. below, and Ontario, 1.92 ft. below. It was anticipated that during July, Superior would be 0.2 ft. higher, Michigan and Huron 0.1 ft. higher, and Erie and Ontario 0.1 ft. lower.

Mariners are cautioned in regard to approaching the works in progress in the neighborhood of Port Weller, where the Welland Ship Canal will debouch into Lake Ontario. The artificial harbor of Port Weller is situated about 2½ miles east of the Port Dalhousie entrance to the existing Welland Canal, and will consist of a basin protected by earth work and riprap breakwaters, terminating in crib work running about 1¼ miles due north into the lake. Cribbs are being sunk in connection with the outer works, and it may at times prove impossible to maintain efficient lights on them, though every effort will be made to keep the outer extremity marked by fixed white lantern lights.

### Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during June.

ARTICLES		CANADIAN CANAL	U. S. CANAL	TOTAL	
Copper.....	Eastbound	Short tons	1,938	13,216	15,154
Grain.....	"	Bushels	1,494,512	1,246,871	2,741 388
Building stone.....	"	Short tons			
Flour.....	"	Barrels	288,320	539,574	827,894
Iron ore.....	"	Short tons	125,706	5,628,268	5,753,974
Pig iron.....	"	"			
Lumber.....	"	M. ft. b.m.	7,227	73,252	80,479
Wheat.....	"	Bushels	2,119,229	2,807,562	4,926,791
General merchandise.....	"	Short tons	16,328	24,530	40,858
Passengers.....	"	Number	1,798	1,969	3,767
Coal, hard.....	Westbound	Short tons	12,006	288,625	300,631
Coal, soft.....	"	"	36,300	1,588,235	1,624,535
Flour.....	"	Barrels			
Grain.....	"	Bushels			
Manufactured iron.....	"	Short tons	4,504	23,800	28,304
Iron ore.....	"	"			
Salt.....	"	Barrels		84,872	84,872
General merchandise.....	"	Short tons	33,631	120,482	154,113
Passengers.....	"	Number	1,361	2,365	3,726
Summary.					
Vessel passages.....		Number	431	2,150	2,581
Registered tonnage.....		Net	684,871	5,846,30	6,531,201
Freight—Eastbound.....		Short tons	284,001	5,956,517	6,240,518
—Westbound.....		"	86,441	2,033,873	2,120,314
Total freight.....		"	370,442	7,990,390	8,360,832



### British Columbia and Pacific Coast.

The lights shown from the gas buoys at Roberts Bank, Vancouver rock, Hodgson reefs and Browning entrance, Vancouver, have been made white instead of red, in contravention of the general rule to show red lights from starboard buoys, in order that their range of visibility may be as great as possible. Notwithstanding the color of the lights, these buoys remain starboard or red buoys and must be so treated.

With reference to the recent statement that the Robert Dollar Steamship Co. was arranging to transfer two of its vessels from the U.S. to the Canadian register, Robert Dollar is reported to have stated, July 8, on his return to San Francisco from Vancouver, B.C., that he went to the latter place with the intention of making the transfer of the steamships M. S. Dollar and Robert Dollar, but found out when there that a sale would be more profitable. He stated that the s.s. M. S. Dollar had been sold to Birkhall and Co., Shanghai, China, and that negotiations were then progressing for the sale of the s.s. Robert Dollar. He is reported to have stated that he had come to the conclusion that the new U.S. regulations made it impossible for the profitable operation of U.S. vessels in any other than the coasting trade.

### Vessel Losses During the War.

A record of merchant vessels of all classes destroyed from Aug. 1, 1914, to June 30, 1915, compiled by the Journal of Commerce, Liverpool, shows a total of 511, with a gross tonnage of 915,547 (approximate). Naturally the greatest proportion of the total loss has fallen on Great Britain. This amounts to 170 steamships of 577,986 gross tons, and 157 trawlers, smacks and sailing vessels, of 31,948 tons, a total of 327 vessels of 609,931 tons. Other vessels owned by the allied nations destroyed during the same period are: France, 24 vessels of 42,233 tons; Russia, 17 vessels of 16,024 tons, and Italy, 2 vessels of 3,826 tons. Of the enemies' vessels 34 German vessels of approximately 102,062 tons, 4 Austrian vessels of 5,691 tons, and 9 Turkish vessels have been destroyed. These figures are only of vessels actually destroyed, and do not include the numbers and tonnage of vessels which have been interned in neutral countries, of which the greater number are German. Taking the last figures available of the total merchant tonnage of the various countries of the world, the loss of tonnage by Great Britain shows approximately 4½%, and of Germany approximately 3%.

**Ships for transportation of war supplies.**—A memorandum issued in Ottawa, July 6, by Senator Loughheed, acting Minister of Militia, respecting orders for war materials placed in Canada by the allied Governments, contained the following paragraph: "In February last representations were placed before the Admiralty as to the inadequacy of transportation facilities across the Atlantic, as that condition prevented our producers and manufacturers from availing themselves of opportunities which might otherwise be open. As a result of these efforts 18 ships were detailed by the Admiralty for the purpose of transporting across the Atlantic supplies purchased in Canada for the British and allied Governments."

The Marine Department has issued lists of all lights and fog signals on the Atlantic coast of the Dominion, including the Gulf of St. Lawrence and the St. Lawrence River to Montreal, and also on the Pacific coast, corrected to Apr. 1.

### Car Ferry on Lake Ontario for Niagara, St. Catharines and Toronto Railway.

The N., St. C. and T. R., a subsidiary of the Canadian Northern Ry., applied to the Board of Railway Commissioners, July 16, for an order providing for the transfer of traffic between the Toronto Harbor Commissioners' dock at the mouth of the Don River, as diverted, and the Canadian Northern yards at Chery St. A. Lewis, Secretary of the Toronto Harbor Commission, stated that the actual agreement for the lease of the dock to the N. St. C. & T. R. had not been drawn up, but the parties had agreed to terms, the dock to be leased for five years, the commission reserving the right to take over the dock when three years of the lease have expired, in which case the commission would provide another dock. The N. St. C. & T. R.'s intention is to operate a car ferry steamship between its terminus at Port Dalhousie and Toronto, the switching of the cars between the dock at Toronto and the Canadian Northern's Cherry St. yards and vice versa to be done by the G.T.R. G. Ruel, Chief Solicitor, Canadian Northern Ry., who made the application to the Board, on behalf of the N. St. C. & T. R., stated that negotiations were under way for the purchase of a car ferry, with capacity for 16 or 17 freight cars, and that the service would be carried on until the completion of the N. St. C. & T. R., which it is proposed to extend to Toronto sometime in the future.

The Board ordered that plans of the dock and the connecting railway lines be filed, and that the G.T.R. and C.P.R. agree on a tariff for the switching.

### Mail Subsidies and Steamship Subventions Voted.

The following amounts for steamship services were voted at the Dominion Parliament's recent session:

Atlantic Ocean.	
Between Annapolis and London or Hull, Eng., or both .....	\$ 5,000 00
Between Canadian Atlantic ports and Australia and New Zealand .....	140,000 00
Ocean and mail service between Canada and Great Britain .....	1,000,000 00
Between Canada and Cuba .....	25,000 00
Between Canada and Newfoundland.	70,000 00
Between Canada and the West Indies or South America or both....	340,666 66
Between Canada and South Africa....	146,000 00
Between Halifax, St. John's, Nfld., and Liverpool .....	20,000 00
Between Montreal, Quebec, and Manchester, Eng., during summer, and between St. John, Halifax, and Manchester during winter .....	35,000 00
Winter between St. John, Dublin, and Belfast .....	7,500 00
Winter between St. John and Glasgow .....	15,000 00
Winter between St. John, Halifax, and London .....	15,000 00
Between St. John, Halifax, and London .....	25,000 00

Pacific Ocean.	
Between Canada and Australia or New Zealand or both, on Pacific Ocean .....	180,509 00
Between Canada, China, and Japan.	253,333 34
Between Prince Rupert, B.C., and Queen Charlotte Islands .....	16,000 00
Between Victoria and San Francisco	3,000 00
Between Victoria, Vancouver, way ports, and Skagway .....	12,500 00
Between Victoria and west coast, Vancouver Island .....	5,000 00
Between Vancouver and northern ports of British Columbia .....	16,800 00

Local Services.	
Between Baddeck and Iona .....	5,825 00
Between Charlottetown, Victoria, and Holiday's Wharf .....	2,500 00
Between Froude's Point and Lockport .....	600 00
Between Gaspé Basin and Dalhousie or Campbellton .....	20,000 00
Between Grand Manan and the mainland .....	10,000 00
Between Halifax and Canso .....	5,000 00
Between Halifax and Newfoundland, via Cape Breton ports .....	10,000 00

Between Halifax, Mahone Bay, Tan-cook Island, and La Have River ports .....	4,000 00
Between Halifax and Spry Bay and Cape Breton .....	4,000 00
Between Halifax, South Cape Breton, and Bras d'Or Lake .....	4,000 00
Between Halifax and West Coast Cape Breton, calling at way ports.	4,000 00
Between Halifax and Sherbrooke....	2,000 00
Between Kenora and Fort Frances....	8,000 00
Between mainland and Magdalen Islands .....	18,000 00
Between Mulgrave and Canso .....	6,500 00
Between Mulgrave and Guysboro, calling at intermediate ports .....	5,500 00
Between Newcastle, Neguac, and Escuminac, calling at all intermediate points on Miramichi River and Miramichi Bay .....	2,500 00
Between Pelee Island and mainland.	8,000 00
Between Petit de Grat and Intercolonial Ry. terminus at Mulgrave....	7,000 00
On Petitcodiac River, between Moncton and way ports, and a port or ports on west coast of Cumberland County .....	2,500 00
Between Pictou and Montague, calling at Murray Harbor and Georgetown .....	6,000 00
Schooner between Pictou, New Glasgow, Antigonish County ports, and Mulgrave .....	1,000 00
Between Pictou, Mulgrave, and Cheticamp .....	7,500 00
Between Port Mulgrave, St. Peter's, Irish Cove, and Marble Mountain, and other ports on Bras d'Or Lakes	6,500 00
Between Prince Edward Island and Cape Breton and Newfoundland....	16,500 00
From opening to closing of navigation in 1915, between Prince Edward Island and mainland .....	12,500 00
Between Quebec and Harrington, calling at ports and places along northern shore of the River St. Lawrence .....	28,000 00
Between Quebec and Gaspé Basin and intermediate ports .....	8,500 00
Quebec and ports on north shore of Isle of Orleans .....	4,500 00
Between Rivière du Loup, Tadoussac, and other north shore ports....	6,000 00
Winter service between St. Catharines Bay and Tadoussac .....	3,500 00
Winter steam service between Rivière du Loup, Tadoussac, and other St. Lawrence ports .....	8,000 00
Between St. John and ports in Cumberland Basin .....	3,000 00
Between St. John, N.B., and St. Andrews, N.B., and intermediate points .....	4,000 00
Between St. John and Bridgetown....	2,500 00
Between St. John and Digby .....	20,000 00
Between St. John, Digby, Annapolis, and Granville, viz. along west coast of Annapolis Basin .....	2,000 00
Between St. John, N.B., and ports on Bay of Fundy and Minas Basin, and Margaretsville .....	8,000 00
Between St. John, Westport, and Yarmouth, and other way ports....	8,500 00
Between St. Stephen, N.B., St. Croix River points, Deer Island, Campobello, and the inner islands, Passamaquoddy Bay, and L'Etete or Back Bay .....	6,000 00
Between Sydney and Bay St. Lawrence, calling at way ports .....	6,000 00
Between Sydney and Whycocomagh.	3,000 00
From Sydney, N.S., around east coast of Cape Breton to Hastings and return to Sydney, via Bras d'Or Lakes .....	5,500 00
Expenses in connection with supervision of subsidized steamship services .....	3,000 00
	<b>\$2,641,234 00</b>

**All vessels must be marked with names.**—Further precautions are being taken against the presence in Canadian waters of suspicious craft of any kind. A notice sent out by the Customs Department states that "complaint having been made that schooners and other small craft are sailing Canadian waters without being marked with their names and port of registry, as required by law, attention is directed to the section of the Merchant Shipping Act which provides that the name of every British ship shall be marked on each of her bows and the name of her port of registry must be marked on her stern." Customs officers are instructed not to grant clearance to or allow to ply within the limits of any port any vessel not so marked.



## Transportation Conventions in 1915-16.

Aug. 17.—International Railroad Master Blacksmiths' Association, Philadelphia, Pa.  
 Aug. 19, 20.—American Association of Railroad Superintendents, San Francisco, Cal.  
 Sept. 14-16.—Roadmasters' and Maintenance of Way Association, Chicago, Ill.  
 Sept. 14-16.—Master Car and Locomotive Painters' Association of the United States and Canada, Detroit, Mich.  
 Sept. 14-17.—Railway Signal Association, Salt Lake City, Utah.  
 October.—American Association of Dining Car Superintendents.  
 Oct. 4, 5.—American Association of Traveling Passenger Agents, Boston, Mass.  
 Oct. 4-8.—American Electric Railway Association, San Francisco, Cal.  
 Oct. 5-7.—Railway Fire Protection Association, Chicago, Ill.  
 Oct. 13-15.—American Association of Railway Surgeons, Chicago, Ill.  
 Oct. 19-21.—Maintenance of Way and Master Painters' Association of the United States and Canada, St. Louis, Mo.  
 Oct. 19-21.—American Railway Bridge and Building Association, Detroit, Mich.  
 Dec. 7-10.—American Society of Mechanical Engineers, New York, N.Y.  
 Jan. 18-20, 1916.—American Wood Preservers' Association, Chicago, Ill.  
 March 21-23, 1916.—American Railway Engineering Association, Atlantic City, N.J.  
 May 2-5, 1916.—Air Brake Association, Atlantic City.  
 June 28, 1916.—Association of American Railway Accounting Officers, Detroit, Mich.

## Among the Express Companies.

The Canadian Ex. Co. has announced that it will carry free to relatives the effects of soldiers who have died whilst on active service.

F. H. Hill has been appointed agent, Dominion Ex. Co., Kelowna, B.C., vice E. C. MacIntyre, who has rejoined his regiment in England for war service.

The Dominion Ex. Co. is operating over the Kettle Valley Ry. from Midway to Merritt, B.C., by way of Penticton. An office has been opened at Penticton.

The Canadian Northern Ex. Co. has commenced its service on Canadian Northern Ry. lines between St. Albert and Peace River Jct., and between Camrose and Edmonton, Alta.

The Dominion Ex. Co. has notified its agents that according to an intimation from British railway companies, the latter will not now accept shipments on which charges have not been fully prepaid. This is made necessary owing to the depletion of staffs due to employees being on active service.

H. Hynes, J. Todd and W. Ellis, employees of the Canadian Ex. Co. at Toronto, were arrested, July 20, on charges of theft of \$2,141, alleged to have been stolen in different sums during 1914 and 1915. The system is stated to have been difficult of detection owing to the way in which shortages have been covered and books falsified. Action was taken at the instance of a bonding company.

The Canadian Ex. Co. on June 16 placed its service in force over the Grand Trunk Pacific Ry. Moose Jaw Northwesterly line between Regina and Gilroy, Sask. A tri-weekly service is given, and offices have been opened at Adams, Archydale, Burdick, Burt, Central Butte, Eastview, Eskbank, Forgray, Gilroy, Keystown, Lake Valley, Lawson, Mawer, Moose Jaw, North Regina, Fattie, Rowletia, Sidmar and Stony Beach.

The Canadian Ex. Co. announces arrangements, effective July 13, for a through express service between eastern and western Canada, on through passenger trains, operating over the Canadian Government Railways (Intercolonial, Prince Edward Island, and National Transcontinental Rys.), G.T.R., Timiskaming and Northern Ontario Ry., and G. T. Pacific Ry. Through express cars will be operated between

Toronto and Winnipeg without transfer, in charge of messengers. The company has arranged with the Canadian Government Railways for the handling of express matter over the N.T.R., and services have been established between points where passenger trains are in operation, viz., Fort William and Winnipeg, Cochrane and Winnipeg, Quebec and Fitzpatrick, Que., and Quebec and Monk, Que. The jurisdiction of the company's superintendents has been extended as follows: F. Norman, Winnipeg to Fort William, office Winnipeg; E. Allen, east of Superior Jct. to the Ontario-Quebec boundary, office Toronto; N. J. Ross, east of Ontario-Quebec boundary to, but not including Edmundston, N.B., office, Montreal; H. C. Creighton, Edmundston to Moncton, N.B., office St. John, N.B.

## Telegraph, Telephone and Cable Matters.

The Dominion Government has had built at Vancouver, a small motor boat for telegraph service along the coast.

T. E. Dudley, agent, Great North Western Telegraph Co., St. Catharines, Ont., has been retired on a pension, after 51 years of continuous service.

The C.P.R., the Great North Western Telegraph Co. and the Bell Telephone Co. have been ordered by the Board of Railway Commissioners to remove their poles from streets in Hamilton, Ont., on which a conduit system has been built.

The Great North Western Telegraph Co. has opened offices at Sarcee Camp, Alta., Beaver, Man., Barriefield Camp and Royal Muskoka Hotel, Ont., Abenakis Springs Hotel, Capucins, Hotel Manoir Richelieu, Lake St. Joseph Hotel, Little Metis and Pointe au Pic, Que., and has closed its office at Neepawa, Man.

The Western Union Telegraph Co.'s earnings for the first six months of 1915 were \$24,019,260, an increase of \$1,532,682; maintenance and depreciation \$3,878,138, an increase of \$365,567; expenses \$15,481,607, a decrease of \$704,949; balance \$4,659,515, an increase of \$1,891,064; surplus after charges \$3,990,915, an increase of \$1,891,089.

The wireless telegraph station at Sayville, Long Island, N.Y., owned and operated by the Atlantic Communication Co., which was said to be under German control, was taken over by the U.S. Government, July 8, "in the interest of American neutrality and to avoid contravention of the Hague convention forbidding the establishment of a wireless station on neutral soil during a war." The company has protested against the Government action.

The Marconi International Marine Communication Co.'s report for 1914, presented at the annual meeting in London, Eng., July 7, stated that during the last five months of the year, the business suffered considerable disorganization and some loss, owing to the war entailing a great increase of work and strain on those responsible for the conduct of the business, but notwithstanding this substantial progress was shown. The revenues showed considerable increase over those of 1913. The company owns and operates on the high seas 995 public telegraph stations against 788 in 1913, and during this year up to June 19 the number was increased to 970.

The Dominion Telegraph Co.'s 46th annual report for the year ended June 30, shows total assets of \$1,309,612.25 and current liabilities of \$1,017,650.37. The company's property is leased to the Western Union Telegraph Co. for 99 years from July 1, 1879, on a guarantee of interest at 6% per annum, which has been paid regularly quarterly in advance since the commence-

ment of the lease. The report says "Your directors deeply deplore the demise on Feb. 25, after a protracted illness, of their old and faithful friend and colleague, Thos. Swinyard, who was connected with the company for 40 years, first as General Manager, then as Managing Director and Vice President, and for the last 32 years as President, and acting upon their feelings of regret and esteem, promptly conveyed to the family of the deceased an official expression of their sorrow and regret, and their sincere condolences, which they felt would be fully shared in and approved of by the stockholders of the company."

## Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

**American Locomotive Co.**—W. Spencer Robertson has been appointed Secretary, vice C. R. Denny, resigned.

**Taylor & Arnold, Limited**, railway material and supplies, Montreal, announce the appointment as Vice President, of Herbert Ewan, who resigned his position as Sales Manager, Canadian Steel Foundries, Ltd.,

**Canadian Car & Foundry Co., Ltd.**, Montreal, has opened an office at 11 Waterloo Place, Trafalgar House, London, Eng., in charge of Geo. Condon, formerly of Montreal. Two of the company's engineers, E. R. Viberg and G. G. Elster, are also located in London.

**M. Beatty & Sons, Ltd.**, Welland, Ont., manufacturers of contractors' machinery, etc., announce that the control and management of the company has been changed. H. L. Beatty has been elected President, and A. O. Beatty, heretofore Consulting Engineer, has been elected Vice President and General Manager. H. T. Dunbar, of Buffalo, N. Y., has been elected a director. V. R. Browning, heretofore President, B. F. Miles, Director, and R. A. Greene, General Manager, who have had charge of the business for the past three years, have severed their connection with the company.

**Wireless Telegraph Equipment on Vessels.**—Canadian Railway and Marine World for February, 1914, contained a list of vessels which had been equipped with wireless telegraph installations by the Marconi Wireless Telegraph Co. of Canada, prior to Dec. 31, 1913, in preparation for the coming into force on Jan. 1, 1914, of the regulations respecting such equipment. We have been advised that the following vessels were equipped between Jan. 1 and Aug. 1, 1914: Chippewa, Kingston, Macassa, Cayuga, Majestic, Corona, Toronto, Chicora and Cascapedia, owned by Canada Steamship Lines, Ltd.; Yarmouth and St. George, owned by the C.P.R.; Garden City and Dalhousie City, owned by the Niagara, St. Catharines and Toronto Navigation Co.; Adventure, owned by Harvey and Co., St. John's, Nfld.; Sable I., owned by Farquhar and Co.; Venture, owned by the Union Steamship Co., and Deliverance, owned by the Southern Salvage Co. Other wireless installations have been made since the war began, but information in regard to them is not available.

**Drop forging dies** usually have a draught of 7 degrees on the sides or vertical walls to permit the easy removal of the forgings.





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Railway Signal Wire  
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JAMES A. THOMSON,  
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FLEXIBLE AND FLANGE PIPE AND SPECIAL CASTINGS

FOR WATER, GAS, CULVERT AND SEWER  
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## MALLEABLE IRON CASTINGS

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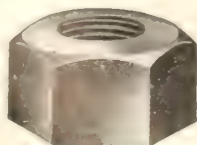
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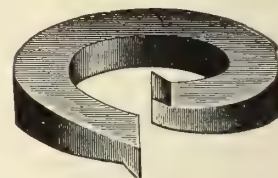
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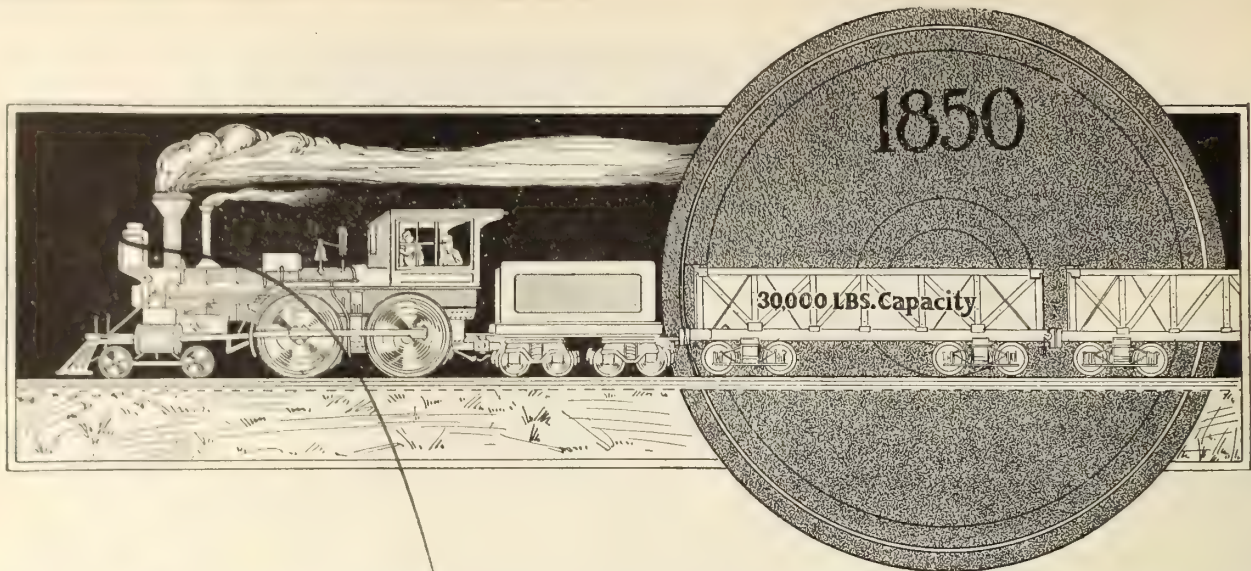
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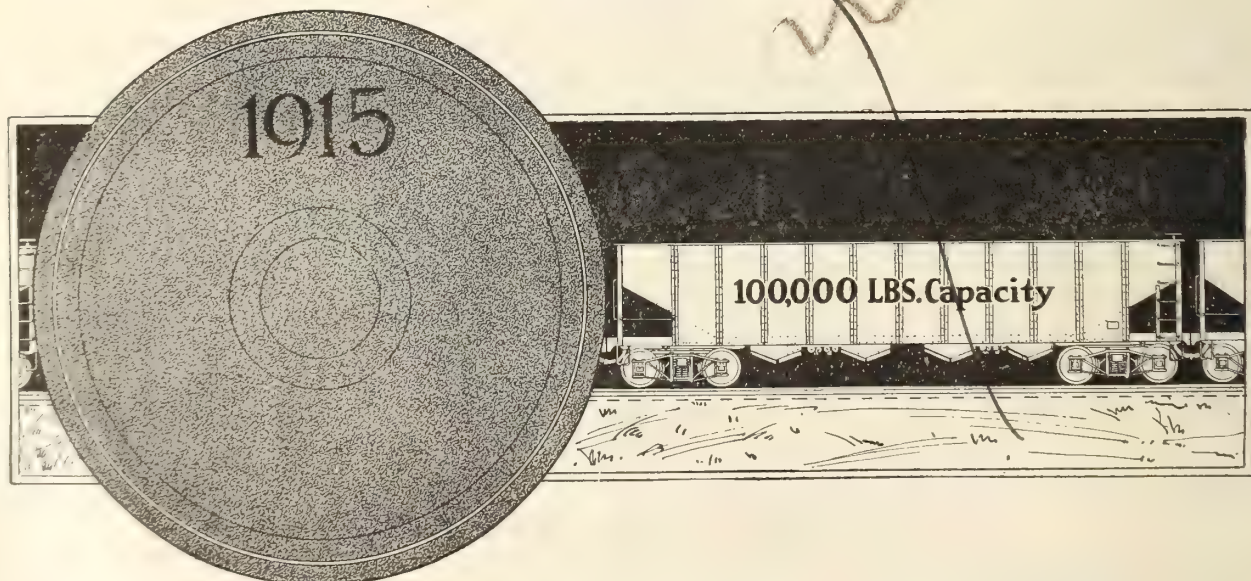
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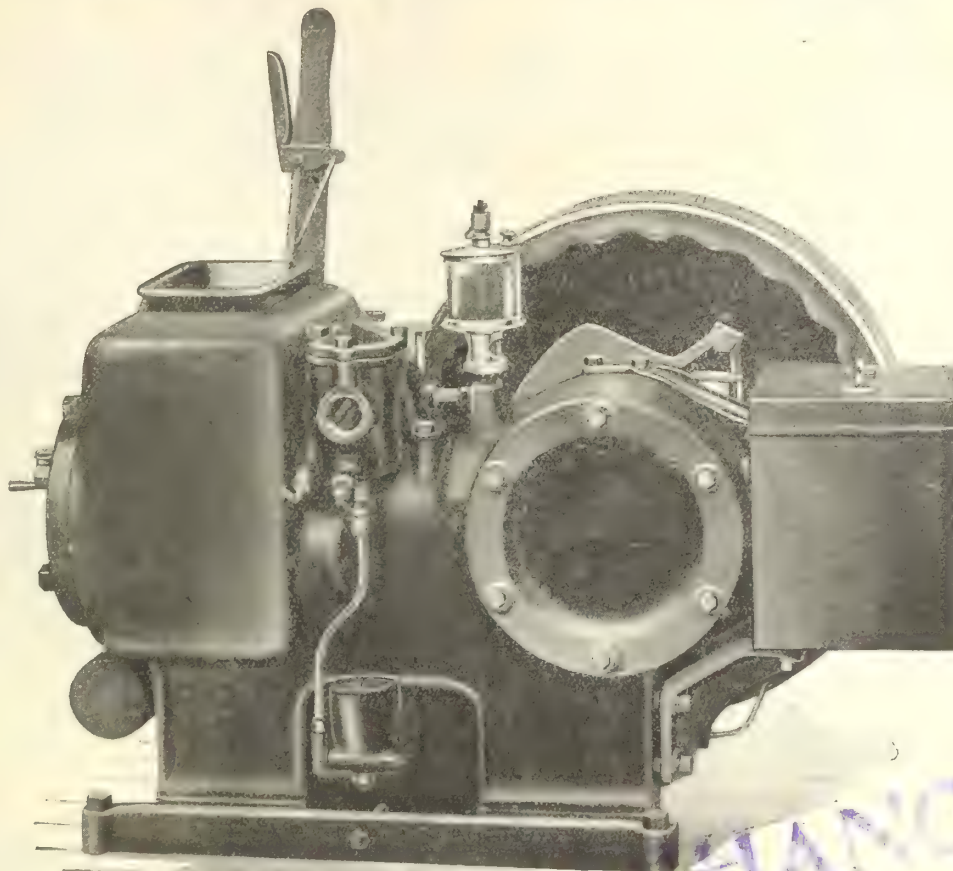
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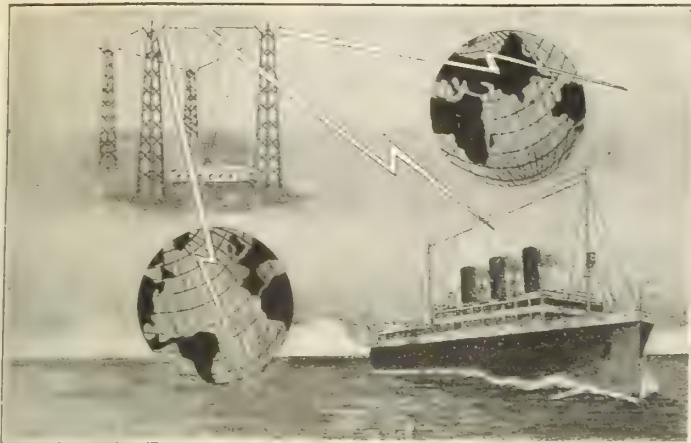
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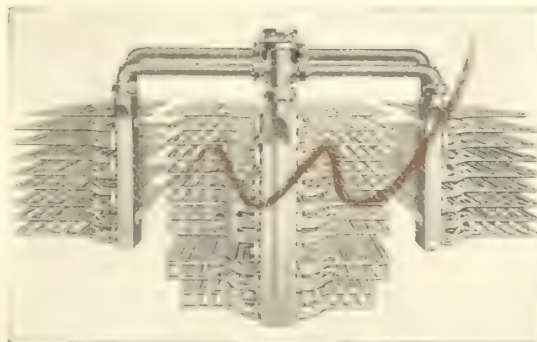
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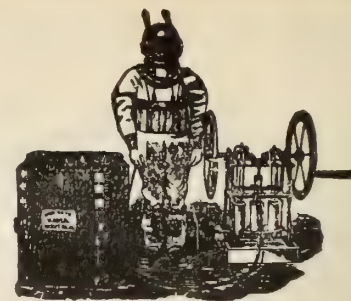
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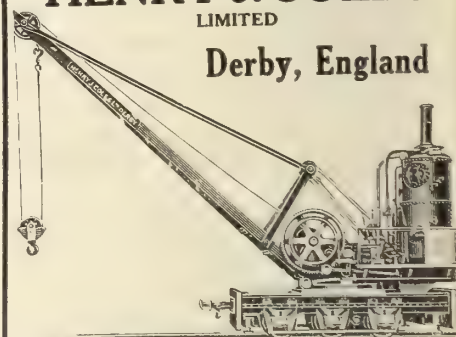
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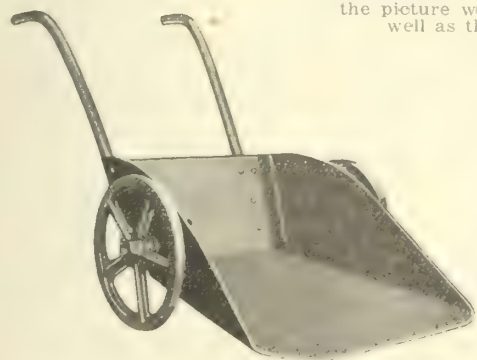
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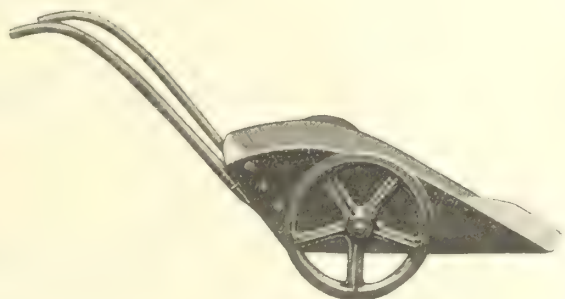
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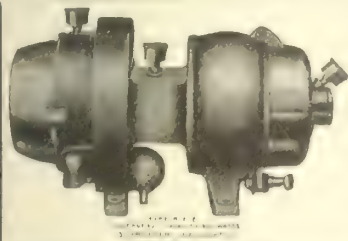
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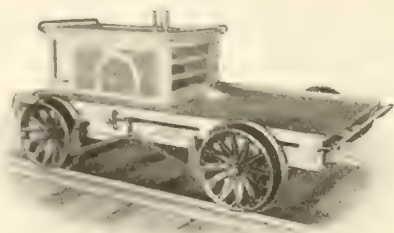
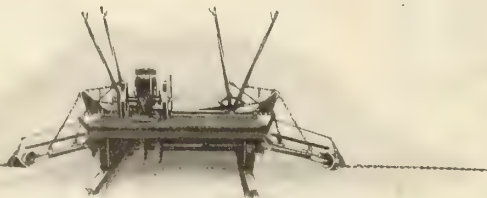
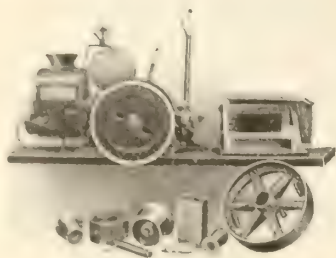
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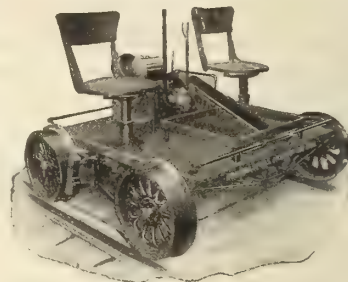
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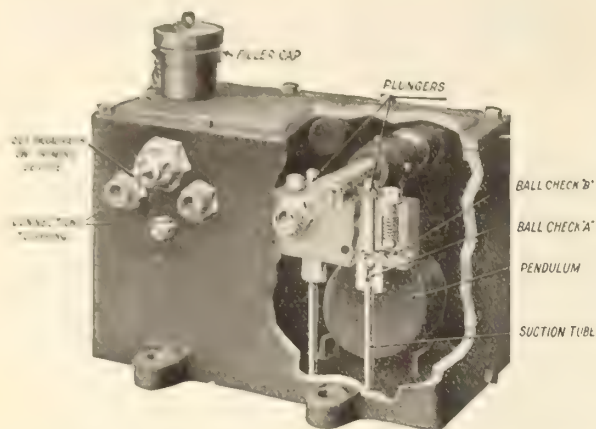
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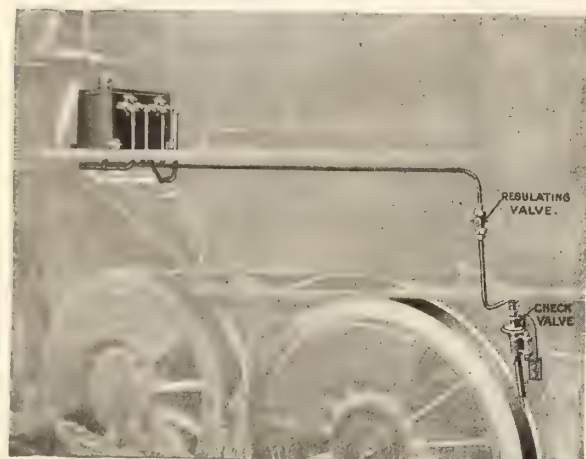
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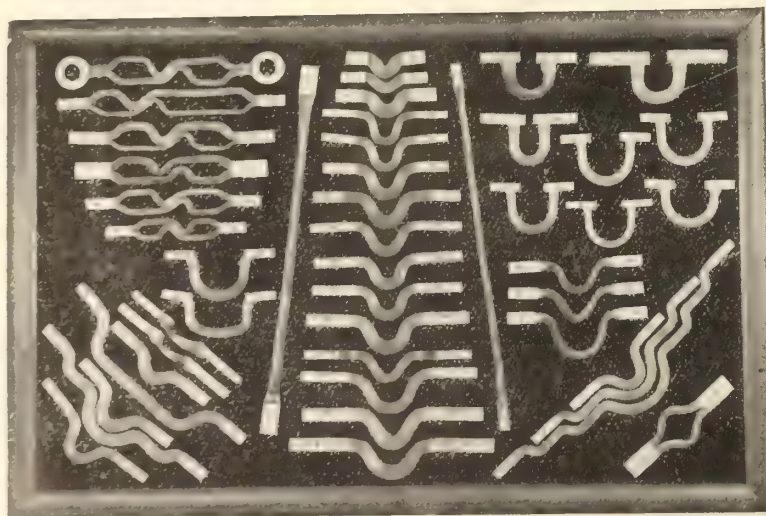
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Dominion Iron & Steel Co.	22				

\*Advertisements marked with an asterisk appear in alternate issues.



## Electric Weld Rail Bonds

meet every condition.

Neither do they corrode at the terminals.

## The Electric Railway Improvement Co.

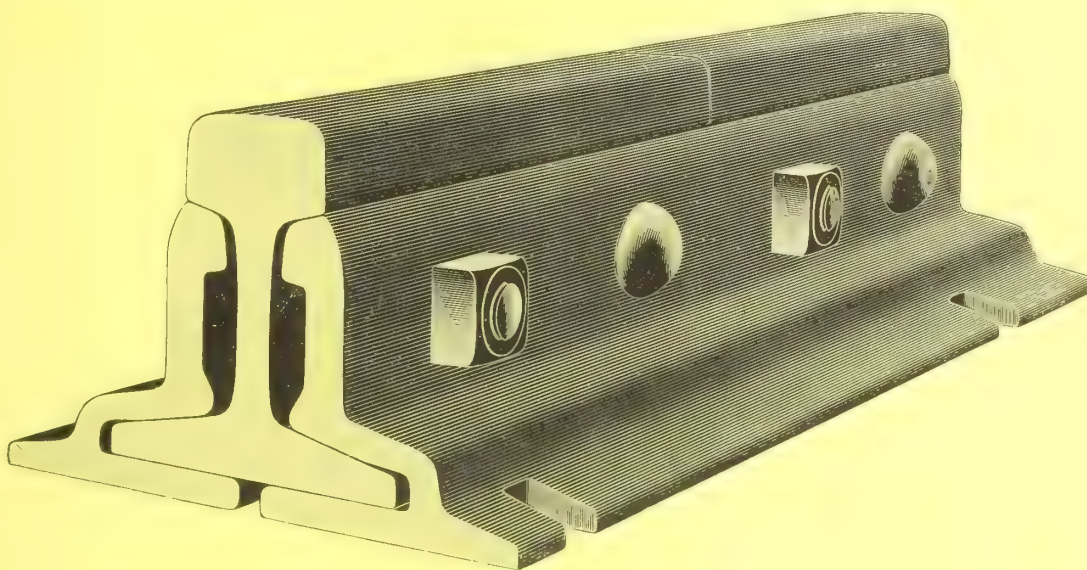
Cleveland, Ohio



# The Rail Joint Company of Canada Limited

606 McGill Building,  
MONTREAL, P.Q., CANADA

Makers of Base-Supported and One Hundred Per Cent. Rail Joints for Standard, Girder, and Special Rail Sections. Also Joints for Frogs and Switches; Insulated Rail Joints, and Step or Compromise Rail Joints. Patented in Canada and the United States.



CONTINUOUS RAIL JOINT.

## THIS COMPANY'S PRODUCT

Is an acknowledged standard, not in an experimental stage; HIGH CARBON STEEL of the best quality used exclusively; Hot-Worked; Oil-Quenched when desired.

See our exhibit at the Panama-Pacific International Exposition, Palace of Transportation, Block 1, East End.

CATALOGUE AND FULL INFORMATION FURNISHED AT ALL SELLING AGENCIES.

Boston, Mass., India Bldg.; Chicago, Ill., Railway Exchange Bldg.; Denver, Colo., Equitable Bldg.; New York City, N.Y., 185 Madison Avenue; Philadelphia, Pa., Pennsylvania Bldg.; Pittsburg, Pa., Oliver Bldg.; Portland, Ore., Wilcox Bldg.; St. Louis, Mo., Commonwealth Trust Bldg.; Troy, N.Y., Burden Avenue.

London, E.C., Eng. . . . . 36 New Broad St.





Trains 73 and 78 Meeting at Grassie, Ontario.

Traffic on the T. H. & B. Railway has been greatly facilitated by the G. R. S. Absolute Permissive Block Signal System recently installed on their road.

Here is what the signals are actually accomplishing.

- (1) Under proper observance of the indications, the signals provide for opposing, as well as following movements, a definite space interval which reduces the likelihood of collisions to a minimum.
- (2) Misplaced switches, broken rails, or any breaks in the continuity of the track cause the display of a stop indication at the signal governing entrance to the block, thus greatly reducing the likelihood of derailments.
- (3) The signals increase the traffic capacity of the line, as one train can follow another as soon as the first train passes the signal in advance, which is accomplished in considerably less time than the prescribed time interval of the telegraph block.
- (4) The signals afford maximum protection at meeting and passing points, serving as a check on dispatchers' orders, also as a reminder to trainmen at scheduled meeting and passing points.
- (5) The signals more than double the safety factor in connection with flagging, as an approaching train would, in most cases, meet a caution or stop indication before the flagman could go out far enough to insure adequate protection.

Realizing that the A. P. Block will move your trains with minimum delay and with safety, why not consider the system for your single track lines?

*"Safety First"*



**GENERAL RAILWAY SIGNAL COMPANY**

**OF CANADA LIMITED**



Office and Works, Lachine, Quebec

Branch Office, Winnipeg, Manitoba



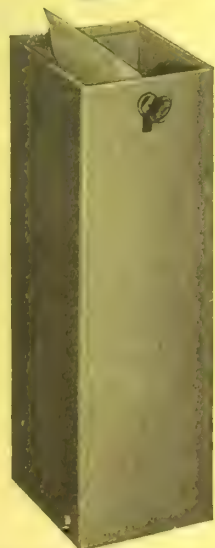
# Canadian Railway AND Marine World

ESTABLISHED 1898.

Number 211

TORONTO, CANADA, SEPTEMBER, 1915

Subscription Rates, Page 349



## No. 4 Type Coleman Fare Box

Our new number 4 type stationary fare box will appeal to electric railway officials for all P. A. Y. E. operating conditions.

Being but five inches square it occupies a minimum amount of space on the car platform and is especially suitable where platform space is limited and also for one man operation.

It is suspended by two brackets to the car railing and the cash box telescopes into the outside casing.

There is only one working part to the box so that there is nothing to get out of order and this feature also insures low maintenance.

Should a glass become broken or should it be desired to clean the glasses this can be accomplished in a few minutes by a very simple means.

When you are considering purchasing fare boxes investigate this number 4 fare box carefully, it will save you money both in first cost and subsequent maintenance.

## Coleman Fare Box Co., Ltd.

*Manufacturers of Portable and Stationary Fare Boxes*

Works :  
Tottenham, Ont.

Head Office :  
70 Bond St., Toronto



## Dependable Machine-Tool Service

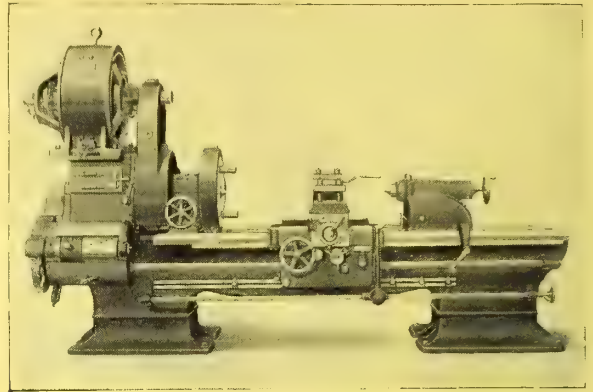
Can only be obtained by combining a reliable machine tool and a properly designed adjustable-speed motor.

## Westinghouse Type SA Adjustable-Speed Motors

Are compact units scientifically designed for machine-tool operation.

They can be mounted on the machine, saving space and eliminating belts and belt troubles.

A controller, mounted within easy reach on the



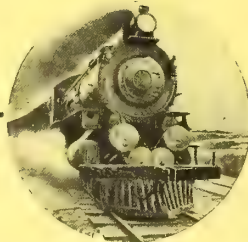
Westinghouse Type SA Motor Driving Lathe

machine, gives the operator instant and absolute control over a wide range of speed variations.

Westinghouse Type SA Motors give satisfaction in every line of machine-tool work. Let us know your needs.

## Canadian Westinghouse Company, Limited, Hamilton, Ontario

TORONTO MONTREAL OTTAWA HALIFAX FT. WILLIAM WINNIPEG CALGARY EDMONTON VANCOUVER  
Traders Bank Bldg. 52 Victoria Square Ahearn & Soper, Ltd. Telephone Bldg. Telfer Bldg. 158 Portage Ave. E. Grain Exchange Bldg. Dominion Bldg. Bank of Ottawa Bldg.



## Scientific Treatment of Boiler Waters Dearborn Service to Railroads

In these times when "Economy" is the slogan in every industry, and particularly in railroad operation, Dearborn Service should make a strong appeal to the Motive Power People.

In treating boiler waters by the Dearborn Method there is no outlay of capital required for installation of equipment, nor expense involved in putting the goods into use, while the cost of the treatment per thousand gallons of water is less than by any other method. We furnish expert testing engineers to advise as to the proper handling of the treatment to get the best results economically.

Scale formation, foaming, corrosion, and pitting are prevented, fuel and lubricating oil expense lessened, greater mileage between boiler washings made possible, as well as ability to haul greater tonnage, and the life of flues and fire boxes extended 50 to 200 per cent.

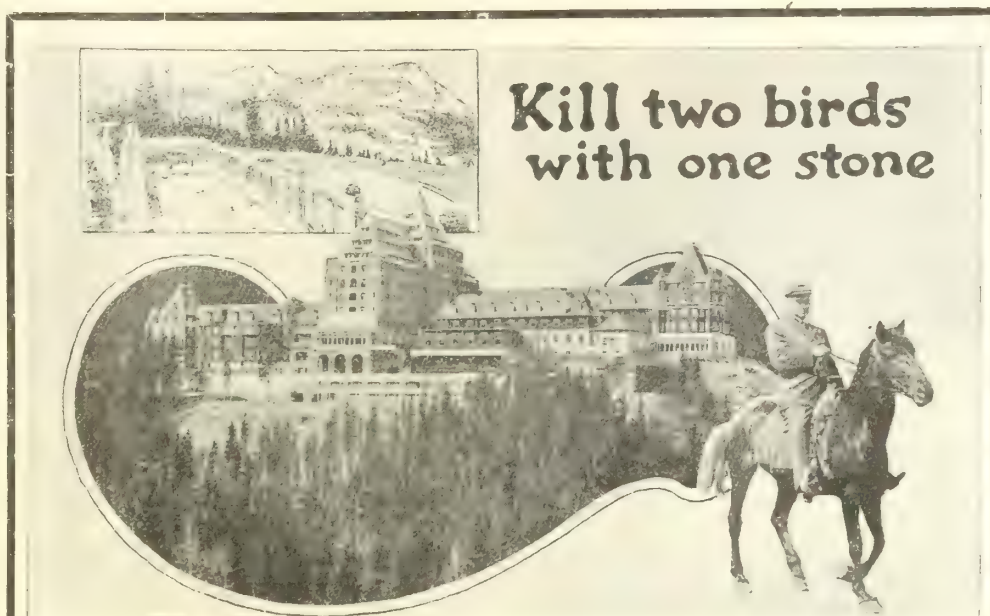
Most railways have had water supplies to contend with. We would like an opportunity to show you the efficiency of Dearborn Service in overcoming such difficulties on your line.

**Dearborn Chemical Company of Canada, Limited**

Office and Works, 1220-1230 Dundas St., Toronto, Canada







and travel via THE

# CANADIAN ROCKIES

to the

## PANAMA PACIFIC EXPOSITION

If you are planning your 1915 trip to San Francisco, make sure your ticket reads via Canadian Pacific, otherwise you will miss the grandeur beauty of nature's most stupendous works—The Canadian Rockies.

**BANFF    LAKE LOUISE    FIELD    GLACIER**

Are important tourist stop-over points on the Canadian Pacific Railway route to the Pacific Coast. These have excellent hotel accommodation, with opportunities for riding, climbing, swimming, boating and golf.

Agents will personally call on you to arrange your itinerary.

Write, phone or call on nearest C. P. R. Representative.

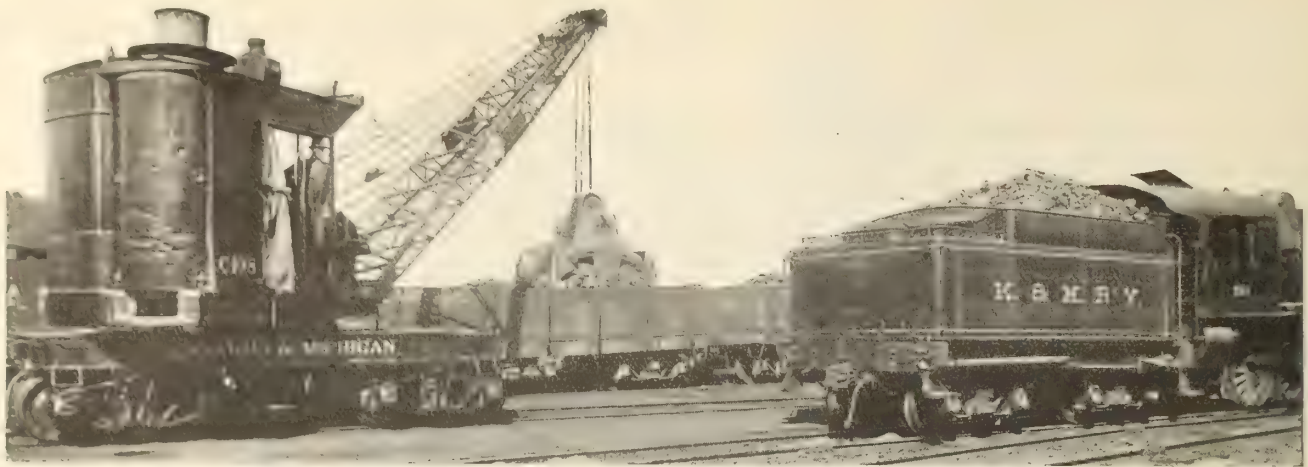
**W. FULTON**

Asst. Dist. Passenger Agent  
Toronto.

**M. G. MURPHY**

Dist. Passenger Agent  
Toronto.





When you are depending upon a locomotive crane for handling your coal you realize that it must be a **good** crane. You cannot have the crane continually breaking down, as it means a big loss in time.

## BROWNHOIST Locomotive Cranes

are being used to-day by railroad men because they realize that these cranes will do their work as it should be done. One road uses thirty of them. These cranes are built for hard, continuous service. And records prove that they will stand up under the severe working conditions. Ask the owners—they will tell you what Brownhoist cranes will do.

Write for our Catalog K, which shows how and where the Brownhoist Locomotive Crane is used.

***THE BROWN HOISTING MACHINERY CO.***  
**CLEVELAND, OHIO**

MONTREAL OFFICE, 145 St. James Street



# Galena-Signal Oil Company

Works

**Franklin, Pa., and Toronto, Ont.**

Canadian Sales Office—603 Shaughnessy Bldg., Montreal, Que.

Sole manufacturers of the celebrated GALENA COACH, ENGINE and CAR OILS, and SIBLEY'S PERFECTION VALVE and SIGNAL OILS.

GUARANTEE COST per thousand miles for from one to five years, when conditions warrant it.

Maintain EXPERT DEPARTMENT, which is an organization of skilled railway mechanics of wide and varied experience. Services of Experts furnished free of charge to patrons interested in the economical use of oils.

**STREET RAILWAY LUBRICATION A  
SPECIALTY**

USE

## Galena Railway Safety Oil

in Headlights, Marker and Classification Lamps, to secure Efficiency of Service, Maximum Candle Power, Clearness of Light.

## Galena Long Time Burner Oil

for use in Switch and Semaphore Lamps, and all lamps for long time burning, to avoid smoked and cracked chimneys and crusted wicks.

Tests and Correspondence Solicited.

**S. A. MEGEATH,**  
PRESIDENT.



# The Steel Company of Canada, Limited

## HAMILTON, CANADA

### Special Steel Marine Forgings

When forgings are required to stand the strain of rough weather, and to prove themselves reliable and dependable, write us for particulars and prices.

We have the facilities for the production of heavy steel forgings of all kinds, including:

Connecting Rods

Crank Shafts

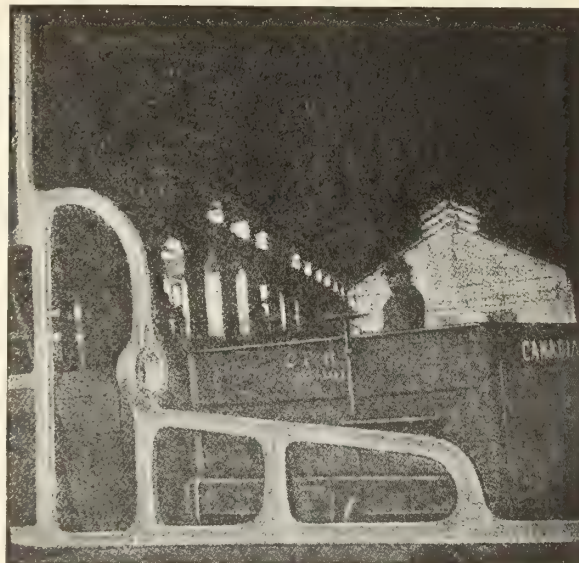
Eccentric or  
Cam Forgings

Marine Engine  
Forgings

Piston Heads

Piston Rods

Shafting



**Stern Frame of Steamship Hamonic**

Rounds

Squares

Rudder Frames

Stern Frames

Side Rods

Steam Engine  
Forgings

#### *District Sales Offices:*

**HAMILTON**

**MONTREAL**

**TORONTO**

**WINNIPEG**

W. A. MacLennan, Vancouver, B.C.  
J. B. H. Rickaby, Victoria, B.C.

H. G. Rogers, St. John, N.B.  
Geo. D. Hatfield, Halifax, N.S.



# Why Stop Your Trains?

Consider the Cost of Stopping Trains  
in comparison to the Maintenance and  
Operation of Mechanical Interlocking.

Trains per day	Cost per year acct. stopping trains	Total cost per year interest deterioration maintenance and operation	Net saving per year	Cost of Interlocking Plant Complete	Time required to pay for installation from saving	Saving capitalized at four per cent
17	\$ 2800.00	\$2800.00		\$8000.00		
20	3285.00	2800.00	\$ 485.00	8000.00	16.5 years	\$12125.00
25	4105.00	2800.00	1305.00	8000.00	6.13 "	32625.00
30	4930.00	2800.00	2130.00	8000.00	3.8 "	53250.00
40	6570.00	2800.00	3770.00	8000.00	2.12 "	94250.00
50	8210.00	2800.00	5410.00	8000.00	1.48 "	135250.00
60	9855.00	2800.00	7055.00	8000.00	1.13 "	176375.00
70	11495.00	2800.00	8695.00	8000.00	11 mos.	217375.00
80	13140.00	2800.00	10340.00	8000.00	9.3 "	258500.00
90	14780.00	2800.00	11980.00	8000.00	8 "	299500.00
100	16425.00	2800.00	13625.00	8000.00	7 "	340625.00

The above figures are conservative and are taken from a reliable source ( See R. S. A. Journal Vol. 1, page 286.) When you can effect a yearly saving by installing G. R. S. Mechanical Interlocking and at the same time reduce your crossing delays, add signal protection to your traffic movements — when you can do all this at a saving of

money — then why stop your trains?

Is this not a convincing reason why you should install G. R. S. Mechanical Interlocking at the majority of your crossings, junctions and yards?

Each day's delay in installing G. R. S. Mechanical Interlocking means a loss to your road.



*"Safety First"*



**GENERAL RAILWAY SIGNAL COMPANY**

**OF CANADA LIMITED**

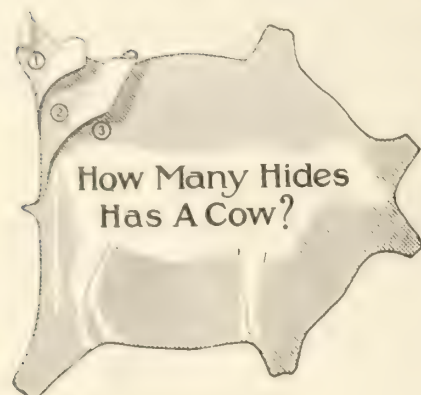
Office and Works  
Lachine, Quebec

Branch Office  
Winnipeg, Man.





# The Cow with 3 Skins



She's not a freak. We meet her in upholstery every day. The outer side of the cow-hide furnishes the article commercially known as "grain leather," while the remaining "splits" are made up in poor imitation of it.

## The Truth About Leather

Since whole hides are too thick for upholstery and the under, fleshy portion must be split away from the grain side to make it thin enough, why should the two or three sheets into which the wastage is split be called leather? Although artificially coated and embossed to look like leather, they are weak, spongy, and soon crack, peel and rot.

Du Pont Fabrikoid is frankly a substitute for leather, guaranteed superior to coated splits. Its base is cotton fabric, twice as strong as the fleshy split. It is coated much heavier and embossed in the same way.



REG. U. S. PAT. OFF.

Is the **ECONOMICAL MATERIAL** for car seating and curtains. It gives cars a richly finished appearance, but costs less than anything else you could use, when life and service are considered.

Du Pont Fabrikoid is **WATERPROOF**. It is sanitary—it

can be cleaned with soap and water. It is tough and durable and gives long service. It gains public good-will—a powerful asset in these times.

Its use is a real economy.

Made in many weights, widths, patterns and colors.

Write for samples and prices.

# Du Pont Fabrikoid Company

DUPONT BUILDING, WILMINGTON, DELAWARE

Canadian Office and Factory, Toronto, Canada.

**WENDELL & MacDUFFIE CO.**

R. R. Department Representatives

63 Broadway, New York, N. Y.



# Meeting One Financial Obstacle to Adequate Signal Protection

There is little doubt that there would be a tremendously greater amount of mileage protected by automatic block if first cost were the only difficulty to be encountered. The great difficulty, however, in the universal use of fixed automatic block signals is found in the continuous cost of maintenance.

The advantage in this respect of

## Simmen Automatic Block Cab Signals



is shown by the fact that none of the four roads which are operating the Simmen System have found it necessary to provide any special organization or additional labor for inspection purposes.

The reason for this is that the track and overhead installation of the Simmen System is so simple (involving no apparatus along the track except standard telephone overhead construction and simple signal rails) that the regular track and line maintenance labor is ample to care for these elements.

All operating electrical apparatus is either in the cab or in the dispatcher's office.

The cab apparatus is easily inspected when the car is in for regular inspection.

The apparatus in the dispatcher's office is readily inspected and cared for by the dispatcher, with the occasional assistance of a lineman.

This enormous comparative saving in maintenance costs is proved by the experience of the four roads on which the **Simmen System** is now, and has for some time been, standardized.

The importance of this fact in any signal installation is obvious.

## THE NORTHEY-SIMMEN SIGNAL CO., Ltd.

### TORONTO

Simmen Automatic Railway Signal Co., Buffalo





## "DOMINION WIRE ROPE"

MADE IN CANADA

And Stocks Carried in

Montreal, Winnipeg and St. Catharines

Wire Rope for Dredges, Drag Line Excavators, Steam Shovels,  
Cranes, Derricks, Coal Towers, Towing, Etc.

**The DOMINION WIRE ROPE CO., LIMITED, MONTREAL**

**Success in Heavy Excavation Work can be  
Accomplished Only by the Use of  
Dependable Equipment**



Where the question of ultimate economy is an item, let us send you quotations and full data on:

**Our Hand or Air operated DUMP CARS.**

**"MARION" Steam Shovels, standard and revolving types.**

**"DAVENPORT" Locomotives.**

BRANCHES

ST. CATHARINES, ONT.

1206 Union Trust Bldg., Winnipeg, Man.

VANCOUVER, B.C.

**F. H. Hopkins & Co**

HEAD OFFICE

**MONTREAL**





### When You Buy O-B Bonds—

You get Bonds that are backed by years of experience in designing and manufacturing.

You get the advice and assistance of our engineers who have made a careful study of many bonding problems.

You get Bonds best suited for your conditions. O-B Bonds are made in a large variety of forms. Catalog No. 14 gives complete listing.

**The Ohio Brass Company - - Mansfield, Ohio**

## H - O RATCHET HAND BRAKE

Patented and Other Patents Pending



H-O Brake Applied to Gondola Car

### FOR BALLAST, GONDOLA AND HOPPER CARS

Always Ready For Use.  
Simple and Efficient.  
Automatic Release.

Cannot be Knocked Off by  
Steam Shovel or Long Loads.

Cannot Get Out of Order  
or Freeze Up.

No Springs.

Strong and Powerful.

Easy to Apply.

Fits Any Standard Brake  
Mast.

Does Away With the Use  
of Clubs.

Thousands in Use.



This is Not Necessary With the H-O



This Can Not Happen With the H-O

**THE HART-OTIS CAR CO., LIMITED - - MONTREAL**



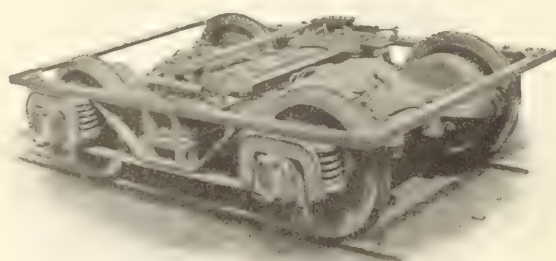
# MODERN HIGH-CLASS ROLLING STOCK



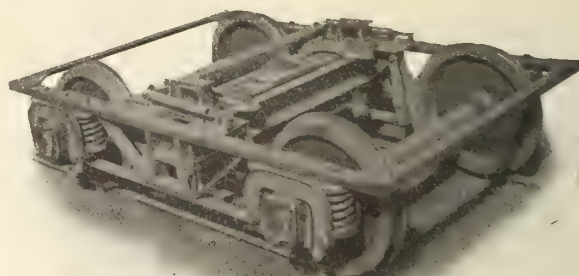
Passenger, Freight  
and  
Electric Railway,  
Car Castings,  
Forgings and Repair  
Parts.

**CROSSEN CAR COMPANY, LTD.**  
COBOURG - ONTARIO

## The "National" Truck for Interurban Service



WITH MOTORS.



WITHOUT MOTORS.

When we can say that we have never had a dissatisfied customer it means that the "NATIONAL" Truck has unusual merit. It solves the problem of minimum weight with maximum efficiency and smooth riding qualities.

"There are no rough spots on the road that uses the "NATIONAL" Truck.

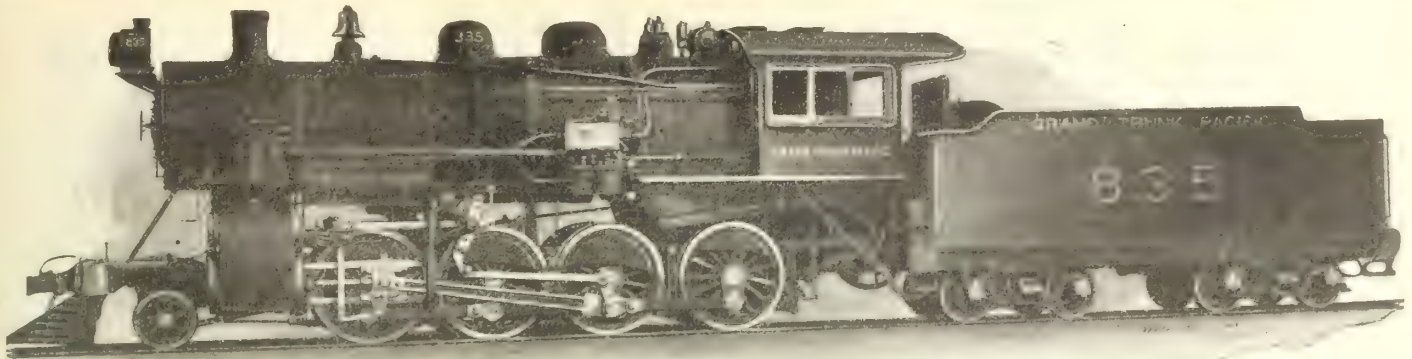
## National Steel Car Company, Limited

Montreal Office  
Shaughnessy Building

ADDRESS INQUIRIES TO HAMILTON

Works and Operating Offices  
Hamilton, Ontario





Consolidated Type Locomotive Built for Freight Service on the Grand Trunk Pacific Railway.

# LOCOMOTIVES

Long experience, new equipment, efficient management and expert workmen, are guarantees that our Locomotives will give record service. Over 1,200 Locomotives have been built at our Works since the erection of the plant. We are builders of Simple and Compound Locomotives adapted to every variety of service, for Railway Contractors, for Industrial Purposes, Mines, all classes of Railway Work, etc.

We are also builders of stationary boilers, suitable for contractors and industrial plants. Grey iron castings—any size or shape—ordinary or intricate—made promptly. New foundry, splendidly equipped. We would be pleased to quote on castings—singly or by contract. We also make drop forgings of all descriptions.

**CANADIAN LOCOMOTIVE CO., Limited, Kingston, Ontario**



## The No. 25 McLain Pressed Steel Headlight

is equipped with triple nickel-plated polished reflector of special parabolic design which centralizes the rays of a concentrated filament Mazda bulb perfectly focused, throwing a straight, strong beam of light down the track, far ahead of the car.

Extremely light—weighing three pounds less than any other Headlight.

No sacrifice has been made to attain this lightness of weight for the McLAIN No. 25 is as strong as any Headlight made, and has an illuminating power in excess of other Headlights employing an incandescent globe.

Has extended dash—Dust and waterproof.

Guaranteed to give good service.

Write for booklet and prices.

**The Trolley Supply Co.**  
Canton, Ohio



# Nova Scotia Steel and Coal Co., Limited

*Manufacturers of*

MARINE, RAILWAY AND GENERAL ENGINEERING. FORGINGS OF ALL SHAPES AND UP TO 40 TONS IN WEIGHT, MADE FROM BEST ORDINARY OR HARMET FLUID COMPRESSED OPEN-HEARTH STEEL. OUR FORGE IS EQUIPPED WITH THE MOST MODERN STEAM HYDRAULIC PRESSES.

*RAILWAY TRACK MATERIAL, fish plate, tie plate, track bolts, spikes, tee rails—12 to 40 lbs. per yard.*

ROLLED STEEL FOR CAR BUILDERS' USE: Spring, machinery, tire, angle, and merchant bar steel, bright compressed shafting, rivets, tank plate—12-gauge up to 1" and 50" wide cold twisted steel bars for reinforced concrete work.

ALSO MINERS AND SHIPPERS OF THE CELEBRATED "OLD SYDNEY" COAL.  
HIGH CALIFORIC VALUE—LOW ASH—UNEXCELLED FOR STEAM-RAISING PURPOSES.  
BEST HOUSE COAL MINED IN CANADA.

Collieries, Iron and Steel  
Furnaces:  
SYDNEY MINES, C.B.

Coal Shipping  
Piers:  
NORTH SYDNEY, C.B.

Finishing Mills, Forge, and  
Engineering Shops:  
NEW GLASGOW, N.S.

ENQUIRIES SOLICITED

Western Steel Sales Office  
Room 14, Windsor Hotel,  
Montreal, Que.

Western Coal Sales Office:  
219, Board of Trade Bldg.,  
Montreal, Que.

Head Office:  
**NEW GLASGOW, N.S.**

## Heavier Trains—Less Coal and Water Per Trip



PACIFIC TYPE LOCOMOTIVE — INTERCOLONIAL RAILWAY.

Total weight of engine, 243,500 pounds; weight on drivers, 154,000 pounds; diameter of drivers, 73 inches; boiler pressure, 180 pounds; cylinders, 23½ x 28 inches; maximum tractive power, 32,400 pounds.

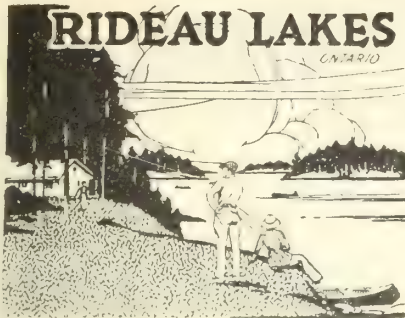
On a 185 mile run at an average speed of 40 miles per hour, these new Pacific type locomotives handle 10 cars and consume 12,884 pounds of coal and 9,750 gallons of water per trip.

Pacific type locomotives built five years ago, handled 9 cars on this same run at the same speed, but consumed 17,620 pounds of coal and 14,250 gallons of water per trip.

This is a saving of 26.9 per cent. in coal and 31.6 per cent. in water, with one extra car.

**MONTREAL LOCOMOTIVE WORKS, LIMITED,**  
DOMINION EXPRESS BUILDING, MONTREAL, CANADA





## Sportsmen and Vacationists Can Now Easily Reach the Rideau Lakes District

Spend a short or long outing here in this wonderful recreation land of superb bass fishing.

Splendid canoe routes and sites for camping and summer cottages among the many small islands.

GET THESE FREE BOOKS—"Lake St. Joseph Hotel, Quebec"; "Where to Fish and Hunt"; "Muskoka's Lake Shore Line"; "Outdoors in Canada"; "Summer Resorts Along the Road by the Sea."

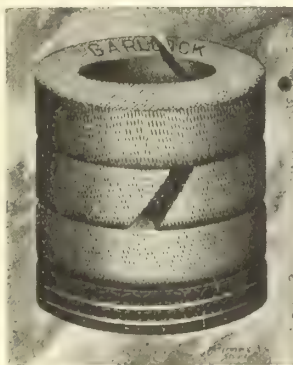
The Canadian Northern Ry. will take you to Canada's finest recreation spots—Muskoka Lakes, Georgian Bay and Parry Sound, Lake St. John District, Lake Edward, Quebec, and many others.



For further particulars as to rates and service apply to nearest C.N.R. Agent, or General Passenger Department, 68 King Street East, Toronto, Ontario.



## FOR PACKING



Style No. 3200

### THE GARLOCK PACKING CO.

HAMILTON ONTARIO

BRANCHES:

CALGARY  
TORONTO



MONTREAL  
WINNIPEG

Locomotive Throttles  
Use Garlock Style Number 3200.

Air Pump Piston Rods  
Use Garlock Style Number 2200.

Ball and Slip Joints  
Use Garlock Style Number 150.

Marine Engine Piston Rods  
Use Garlock Style Number 200.

Cold Water Piston Rods  
Use Garlock Style Number 99.

Inside Packed Plungers  
Use Garlock Style Number 260.

Outside Packed Plungers  
High Pressure Cold Water  
Use Garlock Style Number 960.

Outside Packed Plungers  
High Pressure Hot Water  
Use Garlock Style Number 1907.

These Packings are Guaranteed to give Satisfactory Service under the above conditions.



# The Sign of the Times



Enamelled iron signs are ideal for station name and station door signs.

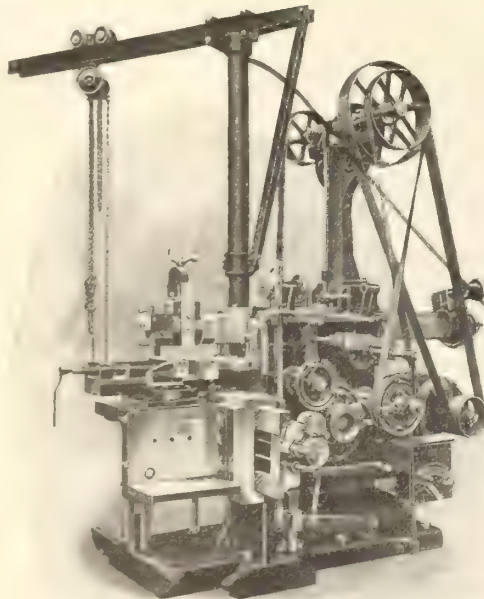
They are much superior to a painted wooden sign, which has to be repainted at frequent intervals, and they last a lifetime.

There is absolutely no wear to them, and we guarantee that they will not fade or be affected by the weather in any way.

We will be pleased to quote you prices on request.

## Acton Burrows Limited

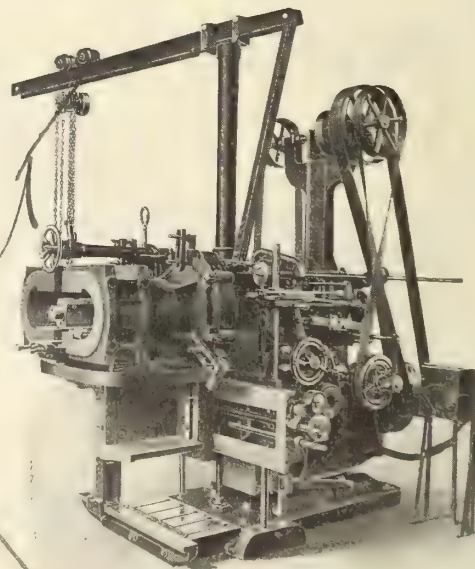
70 Bond Street, Toronto, Ont.



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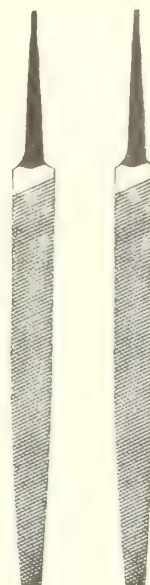
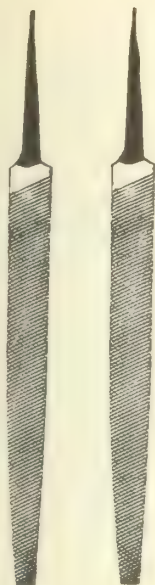
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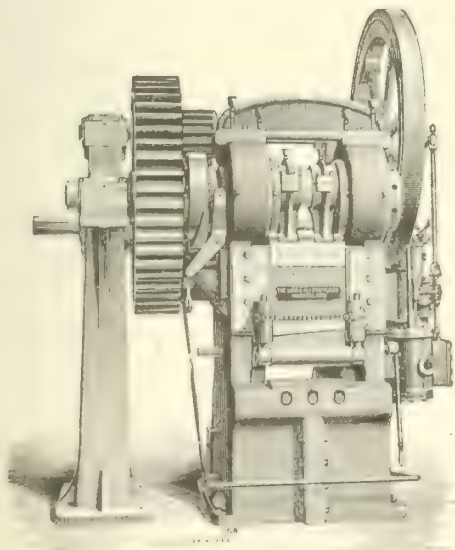
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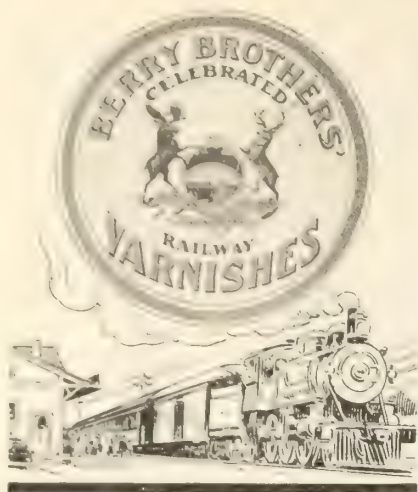
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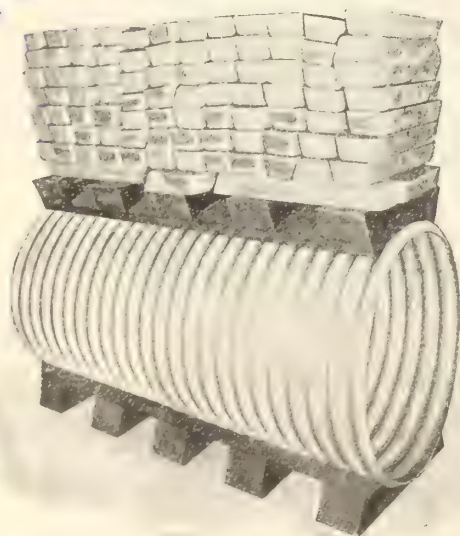
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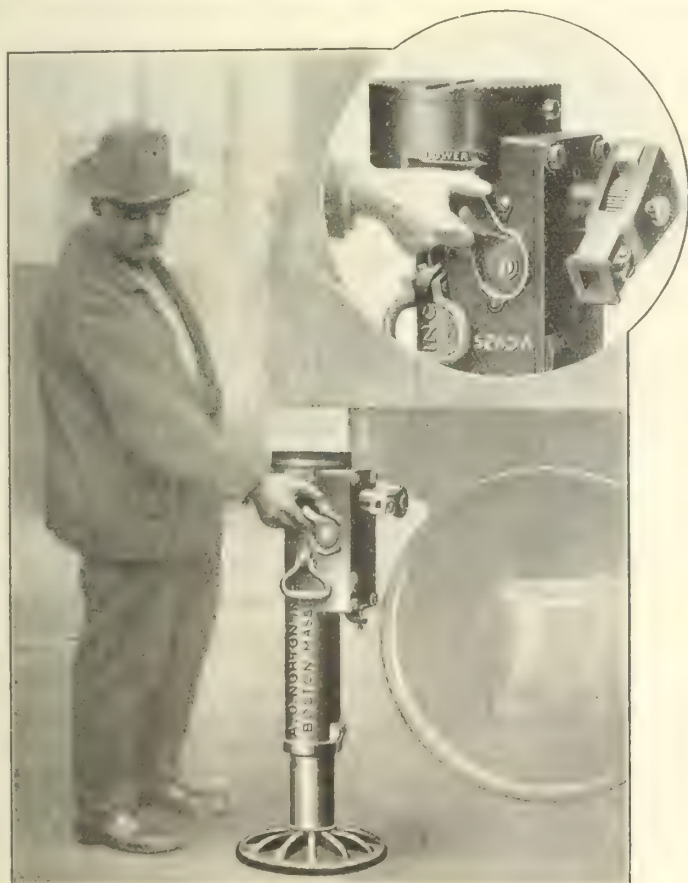
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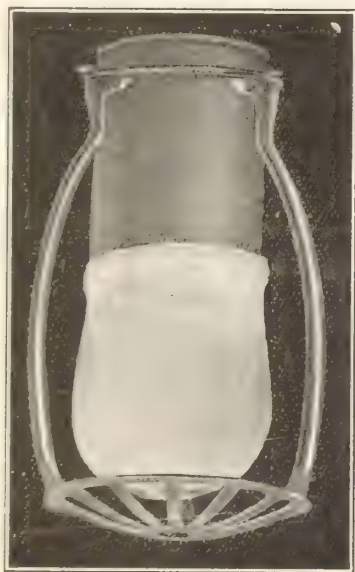
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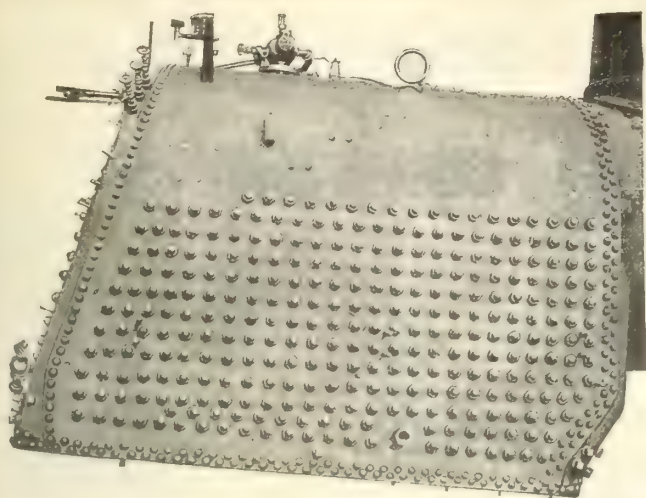
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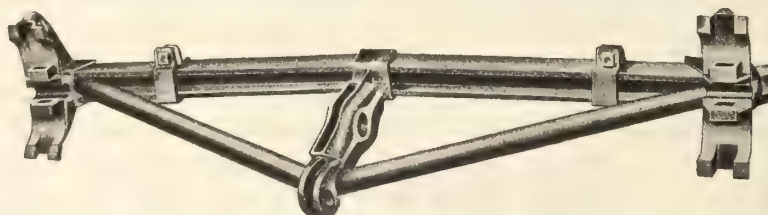
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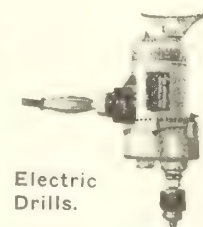
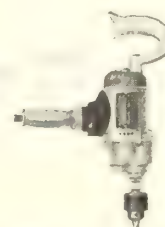


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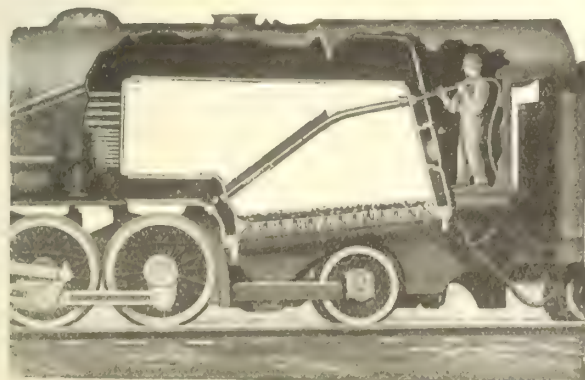
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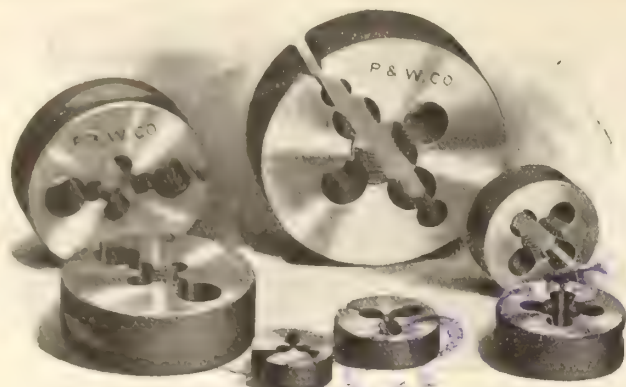
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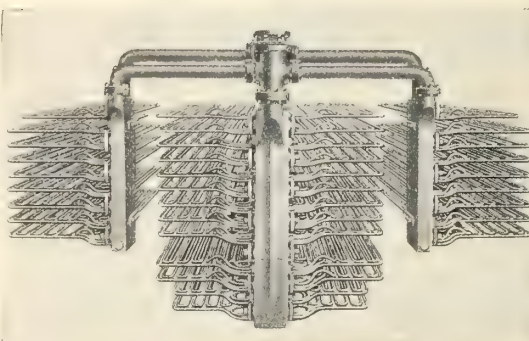
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# Canadian Railway and Marine World

September, 1915.

## North Toronto Grade Separation, Canadian Pacific Railway.

By B. Ripley, M. Can. Soc. C.E., Engineer North Toronto Grade Separation, Canadian Pacific Railway.

The North Toronto viaduct, construction on which was started in a small way during the autumn of 1912, is nearing completion. The general scheme, which is shown in fig. 1, comprises the elevating of four lines of track between Summerhill Ave. on the east and Dufferin St. on the west, with additional passenger facilities at Yonge St. [The new station was described in Canadian Railway and Marine World for August.—Editor.] During Sept., 1912, a trestle was erected between Poplar Plains Road and Summerhill Ave., and the filling in to make up the embankment was commenced from the trestle. This permitted the work on the subway at Avenue Road to be proceeded with. Fig. 3 shows this subway as completed. During its construction the street traffic was diverted on the property acquired for the purpose just east of the street, which facilitated the handling of the work very considerably, and the traffic was not resumed on Avenue

The work at the Howland Ave. subway was started Aug. 12, 1913, the traffic having been diverted over the tracks at Albany Ave. by means of a temporary wooden bridge erected at that point for the purpose.

The work at Bathurst St. subway was started Aug. 23, 1913. In carrying out the work at this point, it was necessary to remove a portion of the tracks of both the Toronto Ry. and Toronto Suburban Ry. After a portion of the excavation had been taken out, a large pocket of gravel containing water was struck, the water making the work a great deal more difficult. This difficulty was also experienced in alterations to water mains, sewers and the laying of the underground electric wires. The foundations were taken slightly deeper in this case than in any other, in order to eliminate the possibility of disturbance by the installation of other underground utilities, at a later date. The street traffic was handled by means of

work to be done at this point, and the city offered no objections at that time, but many difficulties have arisen to delay the work. During the autumn of 1912 the city applied to the Board to have the south approach made level instead of having the 5% approach which had previously been agreed on. The Board ordered in effect that the city could have this on condition that it pay the extra expense incurred by the C. P. R., giving it a certain period in which to decide as to what it wanted. The level approach idea fell through; the C. P. R. had plans prepared for the carrying out of the work, but it was so late in the autumn of 1912 that the work was held over until the following spring. Meanwhile the city applied to the Board for an order compelling the C. P. R. to build the subway at this point, with an increase in the headroom of 4 ft., making an 18 ft. subway, with a 2½% approach. The Board ordered that the city



Fig. 2.—West Abutment Wall of Yonge Street Subway.

Road itself until the whole work, including the paving and sidewalks, was completed. During this period, the Toronto Ry. operated a stub line service from the C. P. R. tracks to the end of the Avenue Road line at St. Clair Ave. [This subway was described in detail in Canadian Railway and Marine World for Sept., 1913.—Editor.]

Other work was not started until early in the summer of 1913, owing to an appeal by the City to the Governor in Council, to change the railway profile west of Avenue Road. Work on Davenport Road subway was, however, started on July 7, 1913. Conditions at this point were somewhat complex, because the subway which was built, and which is known as the Davenport Road subway, really takes both Davenport and Poplar Plains Roads. The general plan, fig. 1, shows the layout at the intersection of these two streets. The alterations necessary to the underground public utilities occasioned thereby involved a large amount of work, the greater portion of which had to be undertaken before the subway could be constructed. The finished subway, viewed from the north, is shown in fig. 5.

The work at Spadina Road was commenced July 19, 1913, the traffic having previously been diverted by a temporary wooden bridge over the tracks at Huron St., at which point also the traffic from Davenport and Poplar Plains Roads was largely handled

the opening up of a new street between Albany Ave. and Bathurst St., and the erection of a temporary wooden bridge over the C. P. R. tracks at Albany Ave.

The work at the Christie St. subway was started Sept. 16, 1913. The traffic was handled by means of a plank roadway and a temporary wooden bridge over the C. P. R. tracks on the west side of the street. The work at this point is almost completed, the bulk of the paving of roadway and sidewalks being finished.

Work was begun at Shaw St. Oct. 6, 1913, prior to which a temporary street had been opened up between Shaw St. and Ossington Ave. over the Toronto Power Co.'s property. This made it possible to divert the traffic from Shaw St. to Ossington Ave. during construction.

The work at Ossington Ave. was commenced June 15, 1914. A 6 ft. circular sewer, laid bare by the excavation, was lowered to comply with the depression of the roadway.

Work was started at Dovercourt Road subway May 5, 1914. Alterations to the sewer were also made necessary by the depression of the street.

At the Yonge St. subway, although the running of trains on the level was abandoned on May 26, 1914, and all the railway traffic run on a trestle overhead, as shown in fig. 4, the work at this point has not progressed very far. The Board of Railway Commissioners for Canada approved, in 1912, of the



Fig. 3.—Avenue Road Subway as Completed.

could have this conditional on the additional cost over and above that of a 14 ft. headroom subway being borne by the city. Before anything further was done the city decided to widen the street at this point from 66 to 86 ft., the widening to be done on the west side. The C. P. R. prepared its plans accordingly, and before the work was again got under way, the city decided to make another change, and to have the street widened on the east instead of the west side. The Board of course issued orders accordingly. This made it necessary to take a strip off the front of the C. P. R. property, which it had purchased for a station site. Some difficulties arose over the settlement to be made between the city and the C. P. R. in this connection, and before the work was again got under way the bylaw in reference to the widening of Yonge St. was rescinded, and of course it was impossible to do any work. A new bylaw, however, has been passed expropriating sufficient property to widen the street on the east side throughout the length of the subway, and the work is now being proceeded with.

Fig. 4 shows a temporary trestle and span at this point. The vehicular traffic is carried underneath the steel span, but the pedestrian traffic is carried on the east side of the street underneath the trestle near the small shanty shown in that figure. Fig. 2 shows the south half of the west abutment, which has already been constructed, and it is ex-



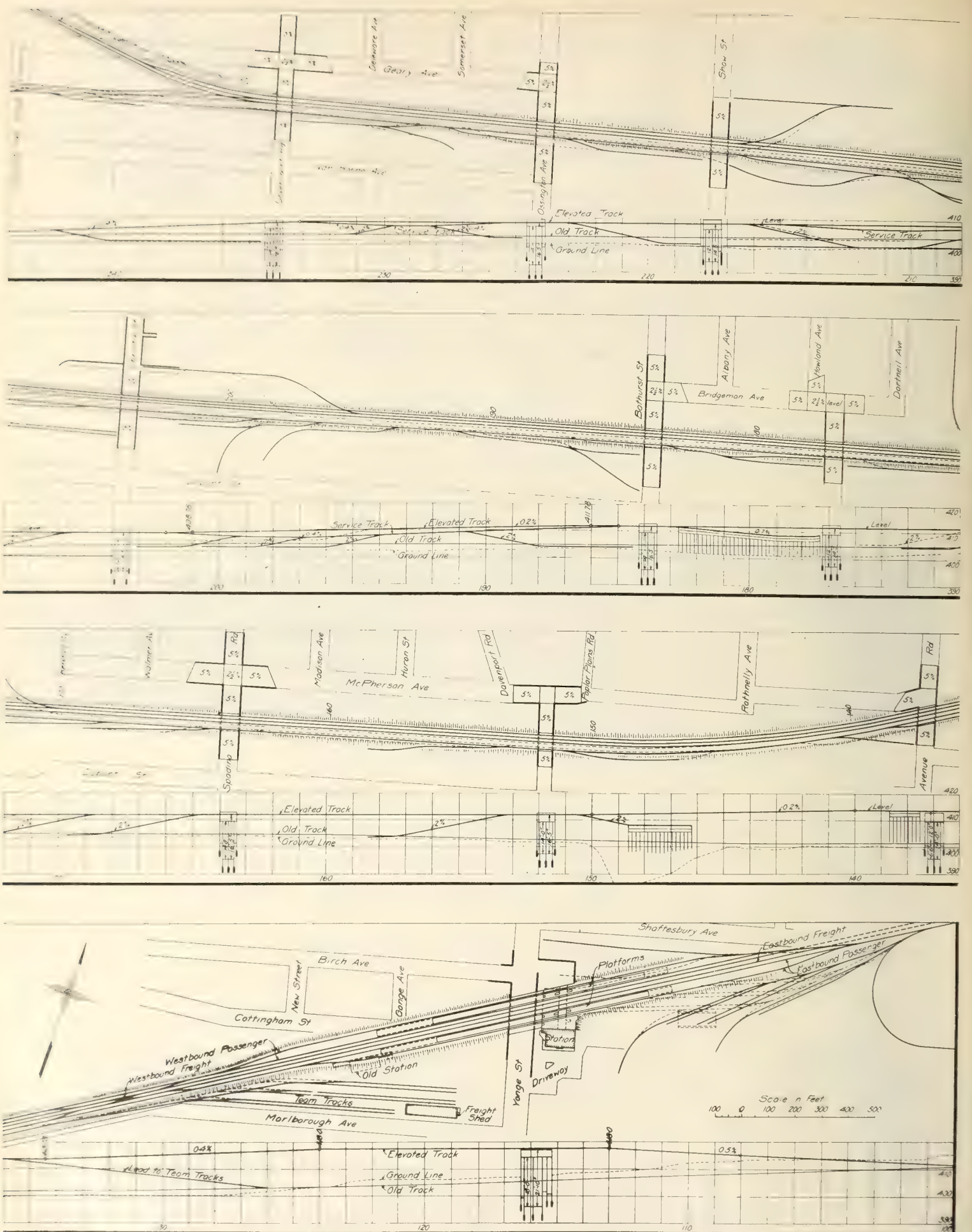


Fig. 1.—Plan and Profile of Track Elevation Across North Toronto.



pected that unless unforeseen conditions arise, the work at this point, which involves heavy expenditures, will be completed, including the paving of the street, before the next freeze up. The depression of the street at this point is  $9\frac{1}{2}$  ft., making it necessary to make some very extensive alterations to the underground utilities, which consist of water mains, sewers, power and telephone conduits, and gas mains. To the east of the street and underneath the C. P. R. tracks will be located a driveway to the station and baggage rooms, the latter being located under the tracks. The driveway will be 28 ft. wide, and the baggage rooms will be about 140 x 60 ft. The new station has been located, as is shown in fig. 1, just east of Yonge St., and south of the tracks.

In building up the embankment between the subways, the earth work, about 280,000 cu. yds. of which is already placed, was hauled from Leaside Jct. To the west of Avenue Road, instead of building expensive trestle work, the tracks were pumped up, or lifted in 6 in. lifts, without interfering with the traffic. At the streets where subways were to be built, timber work corresponding to the deck of a standard railway trestle, was placed underneath the tracks on ties, in such a way that when a 6 in. lift

own half of the viaduct, but between Yonge St. and Avenue Road, the portion which includes the passenger facilities will be owned

solely by the C. P. R. but the Canadian Northern Railway will enjoy the facilities by paying a rental.

## Birthdays of Transportation Men in September.

Many happy returns of the day to:—

G. W. Alexander, Local Treasurer, G.T.R., Western Lines, Detroit, Mich., born at Lightcliff, Yorks., Eng., Sept. 10, 1859.

H. Bailey, ex-Bridge and Building Master, Dominion Atlantic Ry., now of Huntsville, Ont., born there, Sept. 2, 1879.

W. B. Bamford, Division Freight Agent, Atlantic Division, C.P.R., St. John, N.B., born at Belleville, Ont., Sept. 10, 1863.

G. T. Bell, Passenger Traffic Manager, G.T.R. and G.T.P.R., Montreal, born there, Sept. 7, 1861.

W. H. Bigger, K.C., Vice President and General Counsel, G.T.R., and G.T.P.R., Montreal, born at The Carrying Place, near Trenton, Ont., Sept. 19, 1852.

E. J. Blais, Foreman Tinsmith, Grand Trunk Pacific Ry., Transcona, Man., born Sept. 26, 1876.

E. R. Bremner, ex-Division Freight Agent, Ottawa Division, G.T.R., Ottawa, born at Toronto, Sept. 9, 1875.

sion, C.P.R., Calgary, born at Hull, Eng., Sept. 24, 1869.

J. E. Hutcheson, General Manager, Montreal Tramways Co., Montreal, born at Brockville, Ont., Sept. 15, 1858.

C. B. King, Manager, London St. Ry., London, Ont., born at Galena, Ind., Sept. 12, 1871.

S. King, ex-Superintendent, Canadian Car and Foundry Co., Montreal; Director, National Steel Car Co., Ltd., Hamilton, Ont., now of London, Ont., born at Thetford, Norfolk, Eng., Sept. 12, 1853.

R. E. Larmour, Assistant General Freight Agent, C.P.R., Vancouver, born at Brantford, Ont., Sept. 26, 1868.

H. D. Lumsden, M. Can. Soc. C. E., Engineering Department, C.P.R., Toronto, born at Belhaire, Scotland, Sept. 7, 1844.

G. S. Lytle, Car Service Agent, Manitoba Division, C.P.R., Winnipeg, born at Dennison, Ia., Sept. 23, 1878.

C. D. MacKintosh, Superintendent, District



Fig. 4.—Yonge Street Subway Site in Early Stages of Work.



Fig. 5.—Davenport Road Subway as Completed.

was made on the earth work, a 6 in. lift could be made with the deck of the trestle already placed underneath the tracks, by placing ordinary 6 in. sawn railway ties underneath the caps to form cribwork. As the lifting proceeded the cribwork was formed so as to permit driving piles. After the final height or elevation of the tracks had been attained, pile bents were driven, the cribwork was removed, and steam shovel excavation commenced. It was necessary, of course, to drive the piling below the foundation levels, and in some cases on account of the great density of the material encountered, it was necessary to replace the pile bents as many as two and three times, by driving fresh piles.

The substructure of the subway at Avenue Road was built by Jennings and Ross, Toronto, and the superstructure by Canadian Bridge Co. The substructures of subways at Davenport Road, Spadina Road, Howland Ave. and Bathurst St. were built by Wells and Gray, Toronto, and the superstructures by Dominion Bridge Co. The substructures of subways at Christie, Shaw, Ossington Ave. and Dovercourt Road were built by McFarlane, Pratt, Hanley, Ltd., Toronto, and the superstructures erected by Dominion Bridge Co. Wells and Gray have the contract for the substructure of Yonge St. subway, and the superstructure has been awarded to Dominion Bridge Co. The superstructure of Yonge St. involves 2,500,000 lbs. of steel. This is by far the largest amount of steel in any of the subways along the viaduct. It is the C. P. R.'s intention to double track its line between Summerhill Ave. and Leaside Jct., and it is understood that the Canadian Northern Ry. will run into North Toronto over the C. P. R. tracks. To the west of Avenue Road the C. N. R. will

M. H. Brown, Division Freight Agent, Ontario Division, C.P.R., Toronto, born at Victoria Square, Ont., Sept. 2, 1866.

W. B. Bulling, ex-Assistant Freight Traffic Manager, Eastern Lines, C.P.R., Montreal, born there, Sept. 16, 1858.

W. E. Burke, Assistant Manager, Canada Steamship Lines, Ltd., Montreal, born at Belleville, Ont., Sept. 23, 1881.

A. D. Cartwright, Secretary, Board of Railway Commissioners, Ottawa, born at Kingston, Ont., Sept. 20, 1864.

A. S. Dawson, M. Can. Soc. C.E., Chief Engineer, Department of Natural Resources, C.P.R., Calgary, Alta., born at Picton, N.S., Sept. 6, 1871.

W. E. Duperow, Assistant General Passenger Agent, Grand Trunk Pacific Ry., Winnipeg, born at Stratford, Ont., Sept. 4, 1872.

W. H. Estano, Traffic Auditor, Intercolonial Ry., Moncton, N.B., born at Halifax, N.S., Sept. 29, 1874.

C. B. Foster, Assistant Passenger Traffic Manager, Eastern Lines, C.P.R., Montreal, born at Kingston, N.B., Sept. 30, 1871.

J. P. Ferguson, representing Galena Signal Oil Co., Ottawa, Ont., born at Drummondville, Que., Sept. 12, 1856.

R. S. Gosset, Auditor of Disbursements, Canadian Northern Ry., Toronto, born there, Sept. 28, 1879.

John Gray, General Agent, G.T.R., Toronto, born at River Beaudette, Que., Sept. 28, 1863.

D. W. Hatch, Travelling Agent, Atchison, Topeka and Santa Fe Ry., Montreal, born at Bedford, Que., Sept. 1, 1841.

W. R. Howard, Chief Dispatcher and Trainmaster, District 1, Atlantic Division, C.P.R., Brownville Jct., Me., born at St. Andrews, N.B., Sept. 14, 1871.

E. Humphreys, Fuel Agent, Alberta Divi-

1, Alberta Division, C.P.R., Medicine Hat, born at Auckland, New Zealand, Sept. 24, 1882.

F. J. Mahon, Inspector of Telegraphs, Saskatchewan Division C.P.R., Saskatoon, born at Montreal, Sept. 18, 1865.

W. A. Mather, Superintendent, District 1, Alberta Division, C.P.R., Medicine Hat, born at Oshawa, Ont., Sept., 1885.

J. F. Mundle, City Freight Agent, C.P.R., Montreal, born at Prescott, Ont., Sept. 20, 1857.

M. B. Murphy, Superintendent, District 2, Central Division, Canadian Northern Ry., Winnipeg, born at Napa, Cal., Sept. 11, 1866.

J. Paul, District Freight Agent, Canadian Northern Ry., Winnipeg, born in Euphrasia Tp., Grey Co., Ont., Sept. 13, 1858.

W. J. Pickrell, Master Mechanic, Ontario Division, C.P.R., Toronto, born at London, Ont., Sept. 15, 1880.

W. D. Robb, Superintendent of Motive Power, G.T.R., Montreal, born at Longueuil, Que., Sept. 21, 1857.

E. W. Taylor, General Freight Agent, Reid Newfoundland Co., St. John's, Nfld., born at Carbonar, Nfld., Sept. 8, 1870.

F. G. Wood, Commercial Agent, Canadian Northern Ry., St. Louis, Mo., born at Toronto, Sept. 15, 1890.

H. A. Young, Ontario Storage and Cartage Co., Ltd., Toronto, born at Brooklyn, N.Y., Sept. 1, 1864.

**Eastern Canadian Passenger Association.**—The monthly meeting of the association was held at Quebec August 3, instead of Montreal, as customary.

The railway mail clerks in the Winnipeg district have offered to the Dominion Government a machine gun, with eight men to operate it.



# Railway Mechanical Methods and Devices.

## Work Swivel on Lathe in Grand Trunk Railway Stratford Shops.

The swivel stand for swinging work end for end in the lathe, is in use in the G. T. R. shops at Stratford, Ont. A plate with ribs on the underside to guide it along the lathe ways, carries a screw jack base, through which there passes a screw jack. The top of the screw jack carries a V plate, which



Work Swivel on Lathe.

can be raised up under the work to be turned. The customary practice is to screw the swivel up under the work while the latter is still between the centres, then unscrew the tailstock spindle and swing the work. From the lathe carriage there is a link connection, which may be fastened to the swivel base when it is desired to move the latter along the ways, the wheel of the latter making the moving very easy.

## Cleaning Canadian Pacific Railway Car Trucks at Glen Yards, Montreal.

Instead of cleaning passenger car trucks in the common manner with a pail and broom, J. C. Kenny, Car Foreman, Glen Yard, C. P. R., Montreal, has devised the arrangement shown in the accompanying illustrations for accomplishing the task in



Passenger Car Truck Cleaning Outfit.

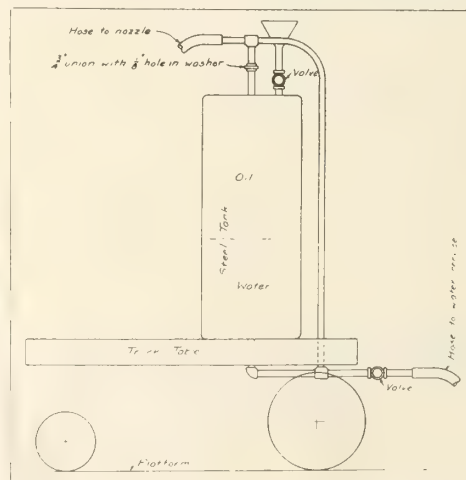
a fraction of the usual time. A steel cylinder, mounted on a truck for transportation through the yard, contains oil and water, the oil on account of its lower specific gravity floating on the water and occupying the upper portion of the cylinder. The tank is piped as shown, water entering at the bottom, a by pass leading up the outside of the tank and across the top, where a connection is made in the top of the tank for drawing off the oil. In this latter connection there is a

$\frac{3}{4}$  in. union, with a brass washer between, pierced with a  $\frac{1}{8}$  in. hole, through which the oil is drawn off from the tank. The water pressure on the bottom of the tank, acting in conjunction with the injector action of the water across the top of the tank, causes a steady flow of oil to leave the tank, water replacing the oil drawn off. This flow of oil mixes with the stream of water, which is directed on the truck to be cleaned, a special nozzle being employed. It is claimed for

the outfit that as much work can be performed in a day with it by one man as by 4 men working on the old bucket and broom method.

## Air Hose Connection Box in Grand Trunk Railway Car Repair Yards at Stratford.

Nearly all the more important car repair yards of the different railway systems have air piped throughout the main trackage area for the use of the car repairers, operating



Passenger Car Truck Cleaning Outfit.

their tools, etc. This is usually done by running a pipe along the surface of the ground, with taps at intervals, with air hose connections at these points, usually at car length intervals. The G. T. R. car repair tracks at Stratford, Ont. have an air main along the full length of the main track. At each of the connections there is a special cast iron box with cover, as shown herewith, of sufficient size to cover valve and hose connection, making it to all practical pur-

cover has a slight flange around the edge to keep it in place. This arrangement is of great value in the winter when the connections become covered with snow and ice, as with this arrangement it is always possible to get at the air supply at any point in the yard. From the safety first standpoint it is also a very desirable feature, as the loose hose attached to the air main is a fruitful source of accident to trainmen when shunting cars, whereas the compact box does not

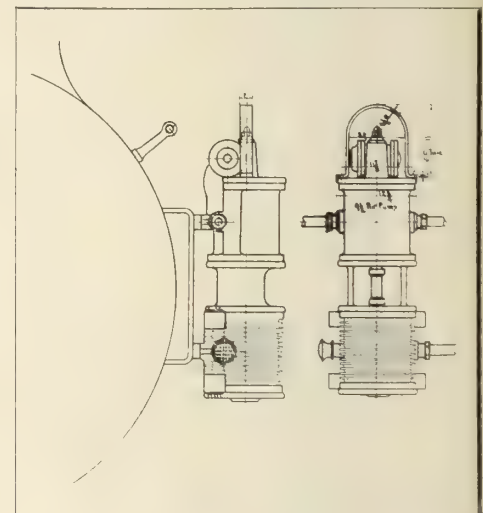


Air Hose Connection Box for Repair Yards.

poses impervious to the weather. The present as great a danger. Other G. T. R. yards are also equipped with the same box.

## Air Pump Lifting Yoke on Canadian Northern Railway.

The Canadian Northern Ry. mechanical department has adopted as standard the lifting yoke shown in the accompanying illustration. It consists of a  $\frac{1}{2}$  x 2 in. piece of



Air Pump Lifting Yoke.

bar iron, bent to a U shape, with right angle feet for attaching to the cylinder head by the latter's bolts. By this simple little device, one of the most awkward jobs encountered on locomotive house practice has been overcome, as it always proved an awkward task slinging the air pump up and down for a locomotive with the limited facilities to be had at such places. With this simple device it is now possible to raise or lower the pump with small loss of time for rigging up.

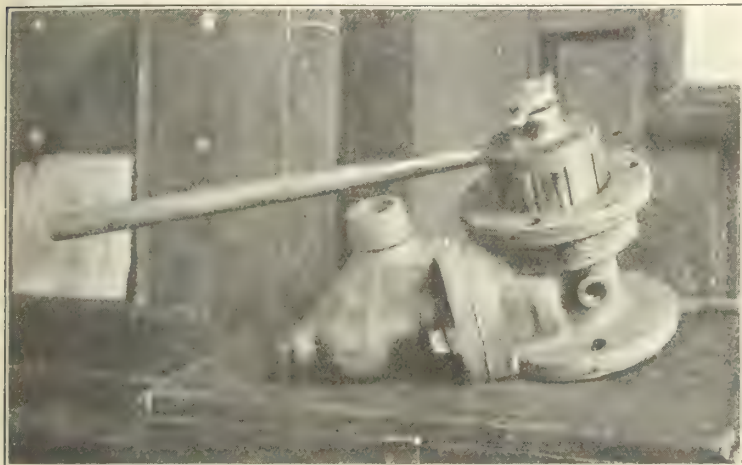


### Triple Valve Bushing Roller in Pere Marquette Railroad Shops.

A speedy method for removing the burr that forms in the end of the triple valve bushing after the valve has been in service for any length of time, has been developed in the Pere Marquette Rd. shops, St. Thomas, Ont. The usual method is to place the bush-

ing of the tool is the adjunct that increases the capacity of the tool. The lower end of this cylinder is square inside to fit over the squared shoulders of the tool. The upper part of the cylinder slips over the spindle of the drill. Near the top on each side are two grub screws, which when the sleeve is slipped over the spindle and the tool inserted, are screwed in to the drift pin hole through the spindle. By this simple means the main

Ont., have a method of handling this, which for repair work leaves little to be desired. The G. T. R. standard car has a standard roof slope, and in consequence the carlines have a corresponding slope. This fact is made use of in the manner shown herewith, where the carlines will be noticed ready for grooving in batches. A wooden jig of the form shown has been made, which fits on the cross planer table, leaving the tapered



Triple Valve Bushing Roller.

ing in the lathe and take a light cut, thereby removing the burr, or else to scrape out the burr if the latter is not too high. This latter method is often too slow, as the comparatively soft brass of the bushing forms a considerable ridge, several thousandths of an inch high, after continued use. This ridge, it might be observed, causes the valve to knock at the end of its stroke, impairing its efficiency.

The method employed in these shops is similar to that used in rolling tubes into the tube sheets, a roller of very similar form being used. The roller inserted is shown in the accompanying illustration. It consists of a body slightly smaller than that of the valve around the periphery of which are drilled a number of holes, which break through slightly on the outer face. In these holes are inserted hardened steel tapered rollers, which fit loosely. In the hollow core is a tapered block, the taper of which corresponds to that of the steel rollers. The upper end of this tapered block is reduced and threaded on the end, passing through the top of the body, on the top of which is a hand nut for drawing up the tapered block. The tool is revolved in the valve by a long handle, the inner block being gradually drawn up, forcing out the rollers as the ridge is gradually reduced. Very rapid work is possible with this tool, and it is highly thought of by the men who use it.

### Drilling Side Rod Holes in Michigan Central Railroad Shops at St. Thomas.

A rigid tool for drilling side rod holes, in use in the Michigan Central Rd. shops, St. Thomas, Ont., is illustrated herewith. It consists primarily of a plain hollow mill, with added attachments that increase the strength of the tool much beyond the usual capacity of such a tool. The cutting portion of the tool consists of a four edged mill of soft steel, with a tapered shank for fitting in the drill press spindle. The four cutting faces of the tool are equipped with high speed steel cutters, each attached by two small cap screws as shown. Between the shank and the body of the mill the tool is squared as shown. The cylinder on the left

torsional strain of the tool is removed from the tang of the tool shank to the four grub screws, which being located at a greater distance from the centre of the spindle than the edges of the tool tang, are better able to carry the heavy strain of the tool. Heavy cuts are possible with this tool without fear

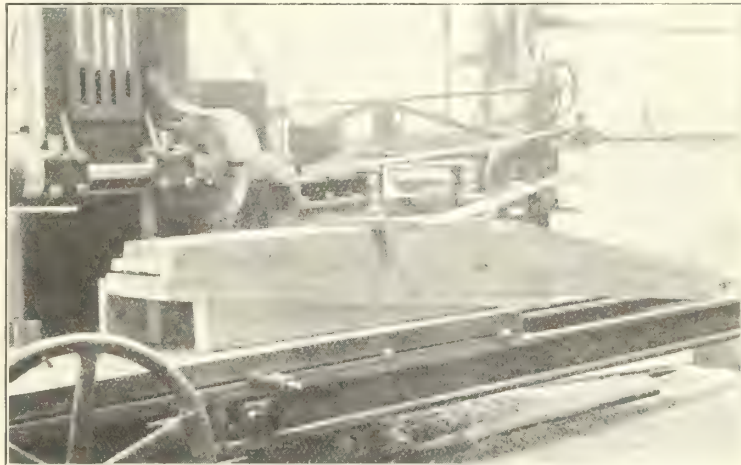


Tool for Drilling Side Rod Holes.

of the tang being twisted off, as is frequently the case with ordinary tools not equipped with an auxiliary drive.

### Planing Carline Grooves in Grand Trunk Railway Shops, London.

Instead of shaping up the roof stringer grooves in the top faces of the freight car carlines in the circular saw, or by chiselling them out, the G. T. R. car shops, London,



Planing Carline Grooves.

face of the carline parallel with the floor, and the car lines parallel with the travel of the table. The cutter head can then be run across the carlines, cutting out the grooves to the desired size in one or more passes. An added feature of this arrangement is that only one carline need be marked off, as



Machine for Cutting off Tube Ends.

opposed to marking off each one in the old method.

### Cutting Off Tube Ends in Michigan Central Railroad Shops at St. Thomas.

A handy tool for cutting off the bad ends of tubes preparatory to safe ending, in use in the Michigan Central Rd. shops, St.



One, is illustrated herewith. It is mounted on a wooden beam for a frame, the main section being that shown. The tube to be cut is placed on rollers, a pair of which is shown in the foreground; a similar pair is located at the opposite end of the machine. Mounted in journals as shown, is a shaft, with a pulley at the far end, and a revolving disc cutter at the near end, the latter located directly over the rollers. The rollers shown are mounted on a vertically

guided cross head, which can be operated by the lever to the right of the cutter. When the tube is inserted the lever is pressed over, raising the rollers and tube, bringing the latter into contact with the revolving cutter, which rapidly severs the tube end. The action of the latter has a tendency to push the tube off the rollers to the left. This is prevented by the vertical arm shown, which is attached to the front face of the roller crosshead.

## Economic Comparison of Railway Ties of Different Materials.

The American Railway Engineering Association's Committee on Ties report at the last annual meeting contained the following on economic comparison of railway ties of different materials. Except in isolated cases ultimate economy in labor and material results from the use of properly treated ties as compared with untreated ties. The economy of any tie of known price and life

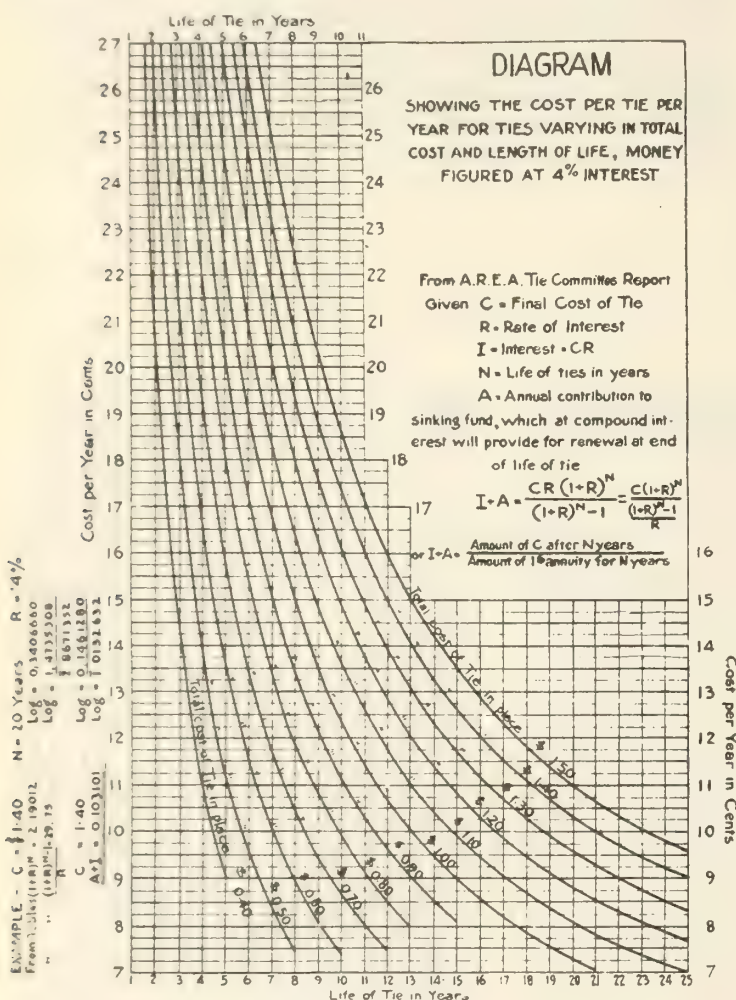
the end of the life of the tie. Required, the total cost:

$$I = CR$$

$$A = \frac{CR}{(1+R)^n - 1}$$

$$\text{Total annual cost} = 1 + A = \frac{CR(1+R)^n}{(1+R)^n - 1} \quad (2)$$

is not such a formidable formula if it is divided up into factors which can be taken from compound interest tables. For the use of our tie department and engineers, I have had three diagrams made up showing the value of  $1+A$ , from which the annual cost per tie can be taken for ties costing from 40c to \$1.50 and varying in life from 2 to 25 years. These diagrams could be made much easier if they only showed the value of  $A$ , that is, the amount required to be subscribed annually to form a sinking fund which would purchase a tie. To this would be added directly the interest on the first cost of the tie. This would have a slight advantage over the present form in a case where the cost of the present tie will differ from the estimated cost of the new tie. The same result, however, can be obtained by taking from the diagram the annual cost, using the estimated value of the new tie, deducting from this the interest per annum at the given rate on this difference. For example, if we estimate that it will cost 80c to renew a tie which cost in place 75c and will



may be determined by the following formulae:

Given C, the first cost of the tie in place; C<sub>1</sub> amount at compound interest which will produce interest equalling the first cost of the tie during the life of the tie; R, the rate of interest; n, life of tie in years; and I, the interest on the first cost. Required the total capitalization of the tie:

$$C(1+R)^n = \frac{C(1+R)^n}{(1+R)^n - 1} \quad (1)$$

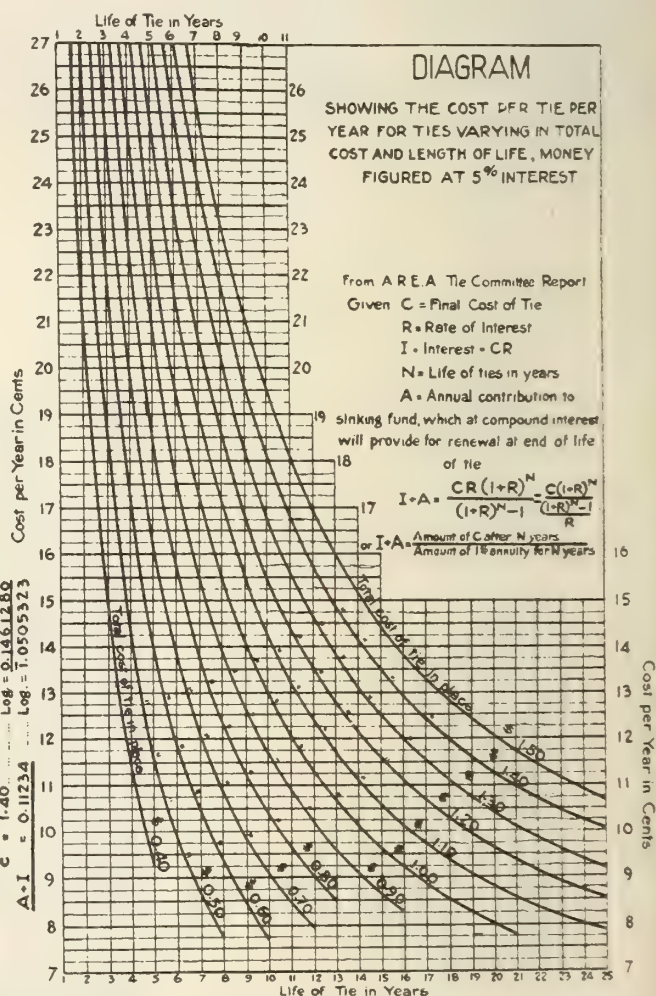
Given C, the first cost of the tie in place; R, the rate of interest; I, the interest on first cost; and A, the amount of compound interest which will provide for renewal at

the end of the life of the tie. Required, the total cost:

$$C = \frac{C(1+R)^n}{(1+R)^n - 1} \quad (3)$$

As printed in the report, two typographical errors occurred, of which J. G. Sullivan, M. Can. Soc. C. E., Chief Engineer, C. P. R., Winnipeg, has sent Canadian Railway and Marine World the necessary corrections, which have been made above. Mr. Sullivan also wrote us as follows:—

"While formula 2 for getting the total annual cost appears a little complicated, it

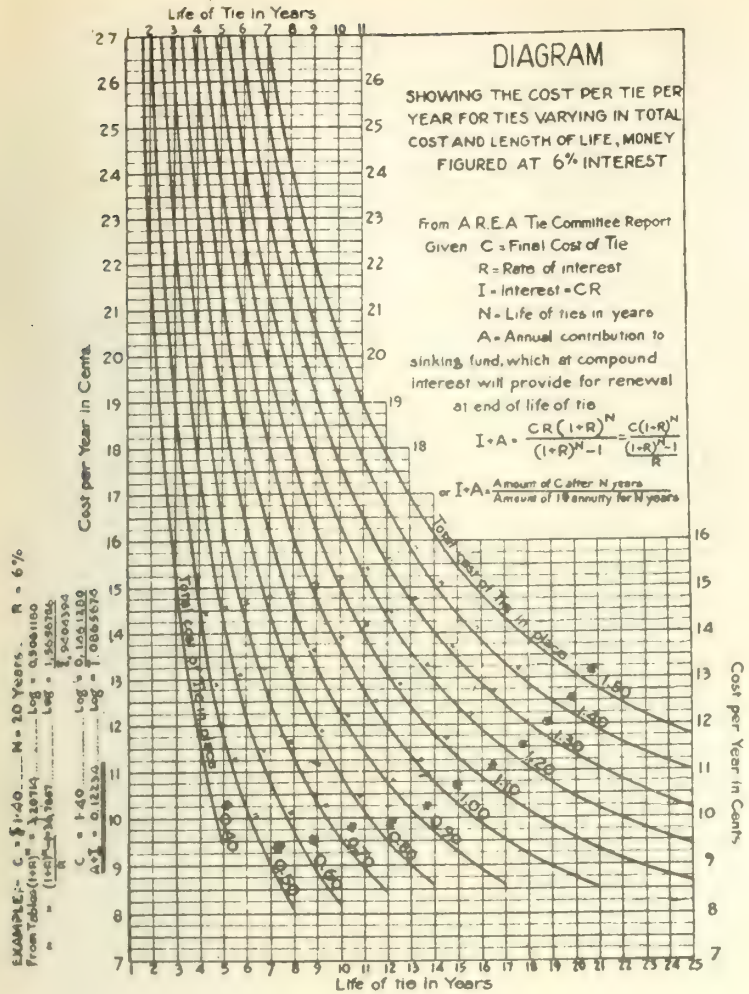


last 8 years, money figured at 5%, we take from the diagram the annual cost of an 80c tie lasting 8 years, which is 12.4c and deduct from this the interest at 5% on the difference in the actual cost and the estimated cost of the renewal, 5c, which is 0.25c, making the annual cost 12.15c instead of 12.4c."

Other diagrams relating to this article appear on page 335.

The C.P.R. has been awarded a gold medal for its pavilion and contents at the Panama-Pacific Exposition, San Francisco, Cal. The chief feature of the exhibit was a large model of the irrigation dam at Basano, Alta.





**ANNUAL COST OF TIES**  
LASTING VARIOUS LENGTHS OF TIME, COSTING IN PLACE VARIOUS SUMS  
MONEY FIGURED AT 4% INTEREST

LIFE IN YEARS	COST IN PLACE											
	\$0.40	\$0.50	\$0.60	\$0.70	\$0.80	\$0.90	\$1.00	\$1.10	\$1.20	\$1.30	\$1.40	\$1.50
1	0.417	0.521	0.625									
2	0.212	0.265	0.317	0.370	0.423	0.477	0.529	0.529	0.635	0.688	0.741	
3	0.144	0.180	0.216	0.252	0.288	0.324	0.360	0.396	0.432	0.468	0.504	0.540
4	0.110	0.138	0.165	0.193	0.220	0.248	0.275	0.303	0.331	0.358	0.386	0.413
5	0.090	0.112	0.135	0.157	0.180	0.202	0.225	0.247	0.270	0.292	0.315	0.337
6		0.095	0.115	0.134	0.153	0.172	0.191	0.210	0.229	0.248	0.267	0.286
7		0.083	0.100	0.117	0.133	0.150	0.167	0.183	0.200	0.217	0.233	0.250
8		0.074	0.089	0.104	0.118	0.133	0.148	0.163	0.178	0.193	0.208	0.223
9			0.081	0.094	0.108	0.121	0.135	0.148	0.162	0.175	0.188	0.202
10			0.074	0.086	0.099	0.111	0.123	0.136	0.148	0.160	0.173	0.185
11				0.080	0.091	0.103	0.114	0.126	0.137	0.148	0.160	0.171
12				0.075	0.085	0.096	0.107	0.117	0.128	0.139	0.149	0.160
13					0.080	0.090	0.100	0.110	0.120	0.130	0.140	0.150
14						0.085	0.095	0.104	0.114	0.123	0.133	0.142
15						0.081	0.090	0.099	0.108	0.117	0.126	0.135
16						0.077	0.086	0.094	0.103	0.112	0.120	0.129
17							0.082	0.090	0.099	0.107	0.115	0.123
18							0.079	0.087	0.095	0.103	0.111	0.118
19							0.076	0.084	0.091	0.099	0.107	0.114
20							0.073	0.081	0.088	0.096	0.103	0.110
21							0.071	0.078	0.086	0.093	0.100	0.107
22								0.076	0.083	0.090	0.097	0.104
23								0.074	0.081	0.087	0.094	0.101
24								0.072	0.079	0.085	0.092	0.098
25								0.070	0.077	0.083	0.090	0.096

**ANNUAL COST OF TIES**  
LASTING VARIOUS LENGTHS OF TIME, COSTING IN PLACE VARIOUS SUMS  
MONEY FIGURED AT 6% INTEREST

LIFE IN YEARS	COST IN PLACE											
	\$0.40	\$0.50	\$0.60	\$0.70	\$0.80	\$0.90	\$1.00	\$1.10	\$1.20	\$1.30	\$1.40	\$1.50
1	0.426	0.532	0.638									
2	0.219	0.273	0.328	0.383	0.437	0.492	0.546					
3	0.150	0.187	0.225	0.262	0.300	0.337	0.375	0.412	0.449			
4	0.116	0.145	0.173	0.202	0.231	0.260	0.289	0.318	0.347	0.376	0.405	0.434
5	0.095	0.119	0.143	0.166	0.190	0.214	0.238	0.261	0.285	0.309	0.333	0.356
6		0.102	0.122	0.143	0.163	0.183	0.204	0.224	0.244	0.265	0.285	0.305
7		0.090	0.108	0.126	0.144	0.162	0.180	0.197	0.215	0.233	0.251	0.269
8		0.081	0.097	0.113	0.129	0.145	0.161	0.177	0.193	0.210	0.226	0.242
9			0.088	0.103	0.118	0.132	0.147	0.162	0.176	0.191	0.206	0.221
10			0.082	0.095	0.109	0.122	0.136	0.149	0.163	0.177	0.190	0.204
11				0.089	0.102	0.114	0.127	0.140	0.152	0.165	0.178	0.190
12				0.084	0.095	0.107	0.119	0.131	0.143	0.155	0.167	0.179
13					0.090	0.102	0.113	0.124	0.136	0.147	0.158	0.169
14					0.086	0.097	0.108	0.118	0.129	0.140	0.151	0.161
15						0.093	0.103	0.113	0.124	0.134	0.144	0.154
16						0.089	0.099	0.109	0.119	0.129	0.138	0.148
17						0.086	0.095	0.105	0.115	0.124	0.134	0.143
18							0.092	0.102	0.111	0.120	0.129	0.139
19							0.090	0.099	0.108	0.116	0.125	0.134
20							0.087	0.096	0.105	0.113	0.122	0.131
21							0.085	0.094	0.102	0.111	0.119	0.128
22								0.091	0.100	0.108	0.116	0.125
23								0.089	0.098	0.106	0.114	0.122
24								0.088	0.096	0.104	0.112	0.120
25								0.086	0.094	0.102	0.110	0.117

**ANNUAL COST OF TIES**  
LASTING VARIOUS LENGTHS OF TIME, COSTING IN PLACE VARIOUS SUMS  
MONEY FIGURED AT 5% INTEREST

LIFE IN YEARS	COST IN PLACE											
	\$0.40	\$0.50	\$0.60	\$0.70	\$0.80	\$0.90	\$1.00	\$1.10	\$1.20	\$1.30	\$1.40	\$1.50
1	0.420	0.525	0.630									
2	0.215	0.269	0.322	0.376	0.430	0.484	0.538					
3	0.147	0.184	0.221	0.257	0.294	0.331	0.368	0.405	0.442			
4	0.113	0.141	0.169	0.198	0.226	0.254	0.282	0.310	0.338	0.367	0.396	0.423
5	0.092	0.115	0.139	0.162	0.185	0.208	0.230	0.254	0.278	0.301	0.324	0.345
6		0.098	0.118	0.138	0.157	0.177	0.196	0.216	0.236	0.256	0.276	0.294
7		0.086	0.104	0.121	0.138	0.155	0.172	0.190	0.208	0.225	0.242	0.258
8		0.078	0.093	0.109	0.124	0.139	0.156	0.171	0.186	0.202	0.218	0.234
9			0.084	0.098	0.112	0.126	0.141	0.155	0.168	0.182	0.196	0.210
10			0.077	0.091	0.104	0.117	0.129	0.142	0.154	0.168	0.182	0.195
11				0.084	0.096	0.108	0.120	0.132	0.144	0.156	0.168	0.180
12				0.079	0.090	0.102	0.113	0.124	0.136	0.147	0.158	0.169
13					0.085	0.096	0.107	0.117	0.128	0.138	0.149	0.160
14						0.090	0.101	0.111	0.121	0.131	0.141	0.151
15						0.087	0.096	0.106	0.116	0.125	0.135	0.144
16						0.083	0.092	0.101	0.111	0.120	0.129	0.138
17							0.089	0.098	0.107	0.115	0.124	0.133
18							0.086	0.094	0.103	0.111	0.120	0.129
19							0.083	0.091	0.099	0.108	0.116	0.124
20							0.080	0.088	0.096	0.105	0.112	0.120
21							0.078	0.086	0.094	0.101	0.109	0.117
22								0.084	0.091	0.099	0.106	0.114
23								0.082	0.089	0.096	0.104	0.111
24								0.080	0.087	0.094	0.102	0.109
25								0.078	0.085	0.092	0.100	0.107

**Locomotive Men's Wages on the G.T.R.**—A new agreement was signed August 7, providing for an amended set of operating rules, and a revision of the wage schedule, with some increases for locomotive drivers and firemen on the G.T.R. The matter has been under negotiation for some weeks.



## Orders by Board of Railway Commissioners for Canada.

Notice is hereby given that the Canadian Railway and Marine World is published in each issue of the Board of Railway Commissioners for Canada, and that subscribers who have filed our paper have a continuous record of the Board's proceedings. No other paper has done this.

Orders of the Board are immediately followed by the Board's decision on which the hearing was held, and the date on which the orders were drawn.

General order 137, May 31. Re equipment of C.P.R. with locking gear for damage to cars. This order is given in full in the issue of Sept. 1, 1915.

General order 138, July 7. Prescribing the joint tariff for joint through the U.S.; also tariff for joint through the U.S.; also tariff for joint through the U.S.

General order 139, July 29. Ordering that railway companies subject to the jurisdiction of the Board shall charge and collect toll not exceeding 75c for cleansing and, or, disinfecting any car in which live stock has been carried when work is done by railway companies; and that any be lawfully in addition to charges, as published in tariffs of companies, for transportation of live stock unloaded from said cars, and disallowing any tariffs showing toll, or tolls, for cleansing, etc., live stock cars in excess of toll of 75c a car; and rescinding order 23927, July 2.

23942, July 3.—Authorizing Edmonton, Dunbar and British Columbia Ry. to build across 5 highways between mileage 385 and 410, Alberta.

23943, July 5.—Approving Edmonton, Dunbar and British Columbia Ry. revised location through Tp. 78, R. 3-6, and Tp. 77, R. 4-5, w. 6 m., mileage 331.77 to 357, Alberta.

23944, July 5.—Ordering G.T.R. to build interchange track with Campbellford, Lake Ontario and Western Ry. (C.P.R.) at Cobourg, Ont., at C.L.O. & W. R.'s expense; to be completed within 30 days.

23945, July 5.—Authorizing City of Toronto to build footbridge over G.T.R. at Innis Ave., and rescinding order 19295, May 14, 1913.

23946, July 6.—Extending to Aug. 15, time within which City of Lachine, Que., shall complete pedestrian subway under G.T.R., at intersection of 6th and 7th Avenues.

23947, July 6.—Authorizing G.T.R. to build sidings for Toronto-Hamilton Highway Commission at Watford, Ont.

23948, July 6.—Recommending to Governor in Council for sanction, lease between Gleggery and Stormont Ry. and C.P.R., June 1.

23949, July 6.—Approving location of Gleggery and Stormont Ry. (C.P.R.) station and grounds at Williamstown, Ont.

23950, July 7.—Authorizing G.T.R. to build siding from its station, southwesterly across William St., across and along Ontario St., to West St., Kingston, Ont.

23951, July 7.—Authorizing G.T.R. to build extension of siding for J. Lloyd & Son, Stratford, Ont.

23952, July 7.—Approving plan and specifications of Dereham Tp., Ont., showing work to be done on drain under G.T.R.

23953, July 5.—Ordering C.P.R. and G.T.R. to file supplements to tariffs, C.R.C. nos. E. 2900 and E. 3036, respectively, showing rate of 3½c. per 100 lbs. on bricks in carloads of minimum weights set out in tariffs, from Milton, Terra Cotta, Cheltenham, and sidings between Milton and Campbellville, Ont., to apply for unloading on railway at Toronto and to points to which Toronto rate applies.

23954, July 8.—Authorizing G.T.R. to build siding for Canada Forge Co., Crowland Tp., Ont.

23955, June 22.—Approving Canadian Northern Ry. standard wire stock pen for shipment

23956, July 9.—Ordering Canadian Northern Ry. to appoint station agent at Richard, Sask., by Sept. 1.

23957, July 10.—Authorizing Saskatchewan Highway Commissioners to build highway crossing over Canadian Northern Ry. in w. ½ Sec. 7-45-16, w. 2 m.

23958, 23959, July 10.—Authorizing C.P.R. to use bridges 25.86, over Haney Creek, North Bay Subdivision, and 7.0, Kipawa Branch, Ont.

23960, July 7.—Approving agreement between Bell Telephone Co. and Hamilton Rural Telephone Co., June 19.

23961, July 13.—Authorizing G.T.R. to build highway crossing over its line at Burke St., Penetanguishene, Ont.

23962, 23963, July 13, 12.—Authorizing C.P.R. to use bridges 22.5, 62.8, 80.5 and 10.8, Sirdar Subdivision, Sask.

23964, July 9.—Approving agreement between Bell Telephone Co. and St. Marys, Medina and Kirkton Telephone Co., June 29.

23965, July 12.—Ordering G.T.R., within 60 days, to install improved type of automatic bell at crossing of Robert St., Penetanguishene,

Ont.; 20% of cost to be paid out of railway grade crossing fund.

23966, June 30.—Extending for two months from date, time within which C.P.R. shall complete certain sidings in Bala, Ont.

23967, July 14.—Extending for period of 60 days from date time within which C.P.R. shall install bell at Hurontario St., Toronto Tp., Ont.

23968, July 14.—Ordering G.T.R. to build farm crossing for W. Couture, Lot 15, Tilbury North Tp., Ont.

23969, July 14.—Authorizing J. J. W. Bell, Regina, Sask., to lay water pipe under Canadian Northern Ry.

23970, July 13.—Authorizing Ottawa Electric Co. to place its wires across C.P.R. where it intersects Prince of Wales Bridge at north side of Lemieux Island, Ont.

23971, July 8.—Ordering G.T. Pacific Ry. to build crossing under its line, at east end of trestle on n. w. ¼ Sec. 16-53-5, w. 5 m., Alberta, work to be done by July 20.

23972, July 19.—Approving revised location of G.T. Pacific Branch Lines Co.'s Moose Jaw Northwest Branch from n. e. ¼ Sec. 19-22-7, to n. e. ¼ Sec. 25-22-8, w. 2 m., mileage 73.8 to 77.7, Moose Jaw District, Sask.

23973, 23974, July 14.—Authorizing Lake Erie & Northern Ry. to build across Henry and George Sts., Brantford, Ont.

23975, July 17.—Ordering that, as soon as Whitton, Que., Council diverts road across C. P.R. near mileage 12, Megantic Subdivision road to right of way fences on each side of railway, and builds C.P.R. spur near present crossing to diverted road; work to be completed within 30 days after building of road.

23976, July 16.—Authorizing C.P.R. to take up Beaver Construction Co.'s spur at Edrans, Man.

23977, July 19.—Authorizing C.P.R. to operate Red River Bridge, Bergen cut off, near Winnipeg.

23978, July 15.—Authorizing Campbellford Lake Ontario & Western Ry. (C.P.R.) to build diversion of road allowance between Cons. 5 and 6, Hichinbrooke Tp., Ont., mileage 30.67 from Glen Tay.

23979, July 15.—Dismissing complaint of E. W. Hogan, Banning, Ont., against removal of Canadian Northern Ry. station agent.

23980, July 19.—Approving C. N. Quebec Ry. through Arundel Tp., mileage 0 to 4.5, and revised location through Arundel, Ponsby and Amherst Tps., mileage 0 to 9.57.

23981, July 15.—Rescinding order 15965, Feb. 12, 1912, in so far as it exempts C.P.R. from erecting fences, gates and cattle guards on both sides of its line between Romford and Baby Lake, Sudbury Subdivision, Ont.

23982, July 17.—Approving revised location of G.T. Pacific Branch Lines Co.'s Cutknife Branch, across Sec. 29-43-18, w. 3 m., Sask.

23983, July 15.—Extending to June 15, 1916, time within which City of Fort William, Ont., shall install interlocking plant at crossing of Victoria Ave. and Vickers St.

23984, July 15.—Authorizing Rev. R. Hewton and others, Montreal, to use farm crossing over G.T.R. and C.P.R. on Lot 34, Pointe Claire Parish, Que., they to maintain crossing, gates to be kept closed, when crossing is not in use, by the man in charge of the cemetery, who shall also see that funerals do not cross tracks when train is in sight.

23985, July 19.—Authorizing G.T. Pacific Ry. to extend transfer track at Frobisher, Sask., about 200 ft. northeasterly, switches to be wire locked with distant signal.

23986, July 20.—Approving G.T.R. plans of station and freight sheds at Thorold, Ont.

23987, July 15.—Authorizing C.P.R. to build spur for Winnipeg Oil Co., Winnipeg.

23988, July 22.—Ordering Canadian Northern Ry. and G.T.R. to arrange that passenger trains moving between Union Station and Rosedale, Toronto, shall not be required to register at Don Station; conductors to hand to switchman, when passing, a register card showing destination of train, locomotive number, and time of arrival; operators to register trains and preserve register cards; said arrangement not to supersede or interfere with any time table rights of the companies.

23989, July 17.—Extending for one year from Dec. 31, 1914, order 12723, Dec. 6, 1910, re C.N. Ontario Ry. crossing of Hurdman's Road, Nepeau Tp., on condition that no locomotive or cars be allowed to pass over crossing without gates being lowered.

23990, July 16.—Ordering Dominion Atlantic Ry. within 30 days from date to arrange a system to provide that shippers of apples, in carloads, whose warehouses are located within 100 yds. of agency station, will receive bills of lading for actual number of barrels loaded in each car; permission being given to include in such system such reasonable provision as to notice and as to time of loading as will prevent undue expense in checking.

23991, July 17.—Ordering that Bell Telephone Co. charge Rev. H. Desroches, of Quebec, for his

initial long distance wall set, its residence rate of \$25, instead of its business rate of \$40 a year, complainant to be given credit for any amount paid since Jan., 1915, in excess of \$25 rate.

23992, July 22.—Authorizing C.P.R. to build industrial siding for J. McCreary & Son, Larchwood, Ont.

23993, July 22.—Authorizing Saskatchewan highway commissioners to build highway crossing over G.T. Pacific Branch Lines Co.'s Moose Jaw northwesterly branch, on blind line between secs. 16 and 21-21-4, w. 3 m.

23994, July 22.—Approving Canadian Northern Ry. revised location through secs. 36 and 25-22-1, w. 5 m., mileage 6.77 to 8.87, Alta.; and authorizing it to cross and divert Blackfoot Trail on n.w. quarter sec. 36, and to cross Blackfoot Trail on s. w. quarter sec. 36-22-1, w. 5 m.

23995, July 22.—Authorizing Vancouver, Victoria and Eastern Ry. and Nav. Co. (G.N.R.) to build industrial tracks on Front St., New Westminster, B.C.

23996, July 22.—Approving agreement between Bell Telephone Co. and Rochester Tp., Ont., July 9, 1915, and rescinding order 17138, July 31, 1912.

23997, July 22.—Approving G.T. Pacific Ry. release of responsibility special contract, in connection with transportation of perishable freight in cold or stormy weather.

23998, July 28.—Authorizing C.N. Ontario Ry. to take portions of Lots 40 and 44, Cartierville, and of Lots 41 and 42, St. Laurent Parish, Que., in connection with crossing of Montreal Park & Island Ry. and St. Laurent Road.

23999, July 19.—Ordering Canadian Northern Ry. to extend loading track at Barwick, Ont., 400 ft.; and authorizing it to build across highway by Aug. 31; and rescinding order 22718, Oct. 16, 1914.

24000, July 27.—Ordering that improved type automatic bell be installed at crossing of Eglinton Ave., York Tp., Ont., by C.P.R. and G.T.R., between their respective tracks; 20% of cost to be paid out of railway grade crossing fund; \$250 by York Tp., Ont.; and remainder equally by C.P.R. and G.T.R., each company bearing cost of wiring bell into its own system, and of maintaining installation of its own line, maintenance of bell to be at joint expense of the two companies.

24001, July 27.—Dismissing application of Fredericton Board of Trade, New Brunswick, for order remedying new arbitrary and discriminatory rates on freight and passenger traffic to and from Fredericton, on C.P.R. and Intercolonial Ry.

24002, July 27.—Authorizing Canadian Northern Ry. to remove its agent at Neepawa Jct., Man.

24003, July 20.—Authorizing Hydro Electric Power Commission of Ontario to erect its wires across Michigan Central Rd. at Lot 5, Con. 8, Howard Tp.

24004, July 20.—Ordering Michigan Central Rd. within 60 days to install improved automatic bell at crossing of Park St., St. Thomas, Ont., 20% of cost to be paid out of railway crossing fund.

24005, July 26.—Authorizing Erie & Ontario Ry. (T.H. & B.R.) to exchange its station buildings at Diltz and at Vaughan, Ont.

24006, July 20.—Authorizing Hydro Electric Power Commission of Ontario to erect its wires across Michigan Central Rd. at Lot 35, Southwold Tp.

24007, July 20.—Approving agreement between Bell Telephone Co. and Haldimand Rural Telephone Co. and rescinding order 7703, Aug. 5, 1909.

24008, July 22.—Approving amended location of G.T. Pacific Ry. station site at Lake Kathryn, mileage 223.4, Prince Rupert East, B.C.; and rescinding order 16278, Apr. 9, 1912.

24009, July 21.—Ordering Canadian Northern Ry. to put into effect certain train service on its Elrose Subdivision, Sask., between Elrose Jct. and Macrorie, and rescinding order 23858, May 27.

24010, July 26.—Authorizing Saskatchewan Highway Commissioners to build highway over Canadian Northern Ry. on s.w. ¼ Sec. 20-27-8, w. 3 m., Sask.

24011, July 23.—Authorizing Hamilton St. Ry., G.T.R. and T.H. & B. Ry. to use half interlocking plant at Gikison St., Hamilton, Ont.

24012, July 26.—Authorizing G.T.R. to build certain sidings near Thorold Station, Ont.

24013, July 26.—Authorizing G.T. Pacific Branch Lines Co. to build across and divert highway in w. ½ Sec. 6, Tp. 42, R. 26, w. 2 m., mileage 62 Prince Albert Branch, Sask.

24014, July 19.—Ordering Michigan Central Rd. within 60 days to install improved automatic bell at crossing of centre side road, Buxton, Ont., 20% of cost to be paid out of railway grade crossing fund.

24015, July 26.—Ordering C.P.R. to appoint station agent at Rockhaven, Sask., by Sept. 1.

24016, July 26.—Ordering C.P.R. within 60 days to install improved automatic bell at crossing of highway near St. Philippe station, Que., 20% of cost to be paid out of railway grade crossing fund.



24017. July 23.—Approving C.P.R. and Canadian Northern Ry. crossing at Methven Jct., Man., and interlocking plant installed there.

24018. July 23.—Approving crossing of Canadian Northern Ry. by C.P.R. in Lot 56, Portage la Prairie, Man., and interlocking plant there.

24019. July 28.—Ordering Toronto, Hamilton & Buffalo Ry. to make cattle pass for A. Mittelehfeldt, Wellandport, Ont., by Aug. 31.

24020. July 27.—Approving G.T. Pacific Ry. plan showing clearance between roundhouse doors.

24021. July 29.—Amending order 23985, July 19, re G.T. Pacific Ry. transfer track at Froebisher, Sask.

24022. July 19.—Ordering G.T.R. to move farm crossing northeast of station at St. Hilaire East, Que., to point opposite Ste. Anne St., at expense of St. Hilaire Village, to be completed by Aug. 20.

24023. July 29.—Authorizing Ottawa Electric Co. to erect its wires across C.P.R. on Second Ave., McKellar, Ont.

24024. July 23.—Approving Lake Erie & Northern Ry. revised location at Waterford, Ont., and approving yards and station there.

24025. July 28.—Authorizing Toronto, Hamilton & Buffalo Ry. to build spur at Dunnville, Ont., to connect with G.T.R. branch, serving Dominion Cannery, Ltd.

24026. July 20.—Authorizing C.P.R. to use bridge 41.2 on its Boundary Subdivision, B.C.

24027. July 31.—Approving C.P.R. Supplement 22 to C.R.C. no. E-2900, and G.T.R. Supplement 26 to C.R.C. no. E-3036, both effective Aug. 5, increasing rates on building brick in carloads, minimum weights set out in tariffs, from Cooksville, West Mimico, and Weston to Toronto, and from Port Credit to Toronto, respectively, from 2½c. to 3c. per 100 lbs.

24028. July 29.—Authorizing St. Paul, Man., rural municipality to build highway crossing over C.P.R. on Willis Ave., north of Middlechurch station.

24029. July 28.—Ordering G.T.R. to install gates at crossing at intersection of Barton St. and Ferguson Ave., to be operated by day and night watchmen appointed by City of Hamilton, Ont.; half-interlocker to be rearranged to form part of combined system; 20% of cost of installation to be paid out railway grade crossing fund, \$480 by city, and \$720 by G.T.R.; Hamilton St. Ry. to pay entire cost of plant, which takes care of street railway operation; remainder of cost to be paid:—40% by city and 60% by G.T.R.; 50% of operation to be paid by Hamilton St. Ry. and remainder, 40% by city and 60% by G.T.R.

24030, 24031. July 28, 19.—Relieving Toronto, Hamilton & Buffalo Ry. and G.T.R. from maintaining watchmen to operate interlocking plants at crossings in Dunnville, and near Diltz, Moulton Tp., on Sundays and between 8.15 p.m. and 6.45 a.m. on week days.

24032. July 30.—Dismissing application of City of Hamilton, Ont., for order directing Toronto, Hamilton & Buffalo Ry. to provide watchmen and gates at intersection of T.H. & R.R. northerly spur with Barton St.

24033. July 30.—Authorizing Canadian Northern Ry. to build across and divert trail in Sec. 8-43-12, w. 3 m., Sask.

24034. July 30.—Ordering that express companies amend form of taking consignees' receipt for goods delivered, by omitting such words as "in good order," or "in apparent good order," so that receipt required be similar to that given shipper, with liberty reserved to consignees, in case of apparent loss or damage, to qualify receipt in accordance with facts.

24035. Aug. 3.—Approving C.P.R. plan X-2-391, showing changed mode of operating gates at crossing of Royce Ave., Toronto.

24036. Aug. 3.—Relieving G.T. Pacific Branch Lines Co. from erecting fences, gates and cattle guards on certain portions of its Tofield-Calgary Branch, between mileage 0 and 201, Alta.

24037. Aug. 3.—Authorizing G.T.R. to operate jointly with C.P.R. over siding on Pardee Ave., Toronto serving premises of Canada Metal Co.

24038. Aug. 3.—Amending order 23974, July 14, re Lake Erie & Northern Ry. crossing of George St., Brantford, Ont., by changing George St. to George Ave.

24039. Aug. 3.—Ordering Canadian Northern Ry. to accept l.c.l. freight from G.T.R. over connection between the two lines at Lyn, Ont., and forward it to destination without further delay.

24040. Aug. 3.—Ordering C.P.R. to amend distributing tariff from Winnipeg, St. Boniface, Paddington and North Transcona, Man., so as to apply same rates to Two Creeks as to Elkhorn, Man.

24041. Aug. 3.—Relieving G.T.R. from providing further protection at crossing immediately north of Howick station, Que.

24042. Aug. 4.—Authorizing G.T. Pacific Ry. to remove regular agent at Gregg, Man.

24043. July 31.—Approving plans and specifications showing work to be done on Mennie drain, under Michigan Central Rd. and Pere

Marquette Rd., in Lots 5, 6, 7, 8 and 9, Con. A, Dunwich Tp., Ont.

24044. Aug. 3.—Ordering C.N. Quebec Ry. to build retaining wall to prevent water from drain across old gravel pit spur on W. Mayrand's property on Lot 22, Deschambault Parish, from going on G. Gignac's property.

24045. Aug. 4.—Ordering C.P.R. to install gates at crossing of Symington Ave., Toronto, Ont., to be operated by day and night watchmen; 20% of cost to be paid out of railway grade crossing fund; remainder and cost of operation to be divided equally between city and C.P.R.

24046. Aug. 4.—Rescinding order 22950, Dec. 4, 1914, re diversion of Rue la Verandrye, St. Boniface, Man., by Canadian Northern Ry.

24047. July 26.—Approving agreement between Bell Telephone Co. and North Colchester Tp., Ont., July 9.

24048. Aug. 4.—Ordering Great Northern Ry. within 30 days to fence right of way, on west side, on S. P. Pond's property, Nelson, B.C., mileage 187 to 188; also mileage 185.2 to 188.75, and 189.50 to 191.45; no barbed wire to be used.

24049. Aug. 4.—Authorizing Alberta Public Works Department to build highway crossing over C.P.R. in s. ½ Sec. 32-6-19, w. 4 m.

24050. Aug. 5.—Ordering that gates at Royce Ave., Toronto, be operated by watchmen appointed by C.P.R. and G.T.R.; in case of disagreement, then by the Board as and for the companies; watchmen to act in each instance for and on behalf of company, the passing of whose trains or locomotives requires operation of gates; in case of any accident at crossing, owing to running of train or locomotive, the company operating such shall alone be liable for any negligence of watchman in charge of gates, and shall indemnify and save harmless the other company from all loss, charges, or damages in respect thereof.

24051. Aug. 4.—Ordering Canadian Northern Express Co. forthwith to maintain express collection and delivery service formerly furnished at Athens, Ont., pending formal hearing by Board.

24052. Aug. 5.—Approving Halifax & South Western Ry. Standard Tariff of Parlor Car Tolls, C.R.C. no. S-1.

24053. Aug. 3.—Ordering C.N. Quebec Ry. to place pipe or open box culvert under its railway at ditch on S. Germain's property, Portneuf, Que.

24054. Aug. 9.—Authorizing Montreal & Southern Counties Ry. to operate temporarily, for construction purposes only, over C.P.R., on Lot 34, St. Paul d'Abbotsford Parish, Que.; crossing to be protected by a flagman.

24055. Aug. 6.—Amending order 24029, July 28, re G.T.R. and Hamilton St. Ry. crossings at intersection of Barton St. and Ferguson Ave., Hamilton, Ont.

24056. Aug. 9.—Ordering G.T.R. to build siding for not less than five cars, and to build flag station, with small freight shed attached, at Ratho, Ont.; work to be completed by Sept. 15.

24057. Aug. 6.—Authorizing Toronto Ry. to appeal to the Supreme Court of Canada from Board's order directing it to bear portion of cost of subway at Avenue Road, Toronto.

24058. Aug. 6.—Ordering C.P.R. to bond a further 700 ft. of its track north of Port Burwell Road, Port Burwell, Ont., at mileage 32.7, and to widen the road to 20 ft. for 100 ft. each way from the crossing; municipality to pay \$100, and C.P.R. the remainder.

24059. Aug. 6.—Authorizing G.T.R. to rebuild bridge 180 over Blanche River, District 3, Montreal Division, Plessisville, Que.

24060. Aug. 9.—Authorizing Saskatchewan Highway Commissioners to build highway crossing over Canadian Northern Ry., between n.w. ¼, Sec. 3, and s.w. ¼, Sec. 10, Tp. 34, R. 3, w. 2 m.

24061. Aug. 9.—Ordering G. T. Pacific Ry. Co. to fence its right of way through Latta Brothers' property, North Bulkeley, B.C., by Sept. 1.

24062. Aug. 3.—Prohibiting C.P.R., G.T.R., and Canadian Northern Ry. from blowing steam whistles of any locomotive when approaching highway crossings within limits of the City of Toronto.

24063. Aug. 11.—Extending, to Sept. 15, time within which C.P.R. may install bell at highway crossing, mileage 6.94, Ketepec station, St. John, N.B.

24064. Aug. 11.—Authorizing C.P.R. to remove regular agent at Magaguadavic station, N.B., a caretaker to be appointed.

24065. Aug. 11.—Approving location of Canadian Northern Ry. third class station at Fisher Branch, Man.

24066. Aug. 11.—Authorizing Saskatchewan Highway Commissioners to build a highway crossing over Canadian Northern Ry. in n.w. ¼, Sec. 33, Tp. 14, R. 25, w. 2 m., at C.N.R.'s expense.

24067. Aug. 11.—Authorizing G.T.R. to build spur for Coasts and Lakes Contracting Corporation, Bertie Tp., Ont., to be completed within 3 months.

24068. Aug. 11.—Authorizing G.T.R. to build siding for Dominion Sugar Co., Waterloo Tp.,

Ont., to be completed within three months.

24069. Aug. 11.—Authorizing G. T. Pacific Branch Lines Co. to build across highway between Secs. 9 and 10, Tp. 45, R. 23, w. 3 m., mileage 47.3.

24070. Aug. 11.—Authorizing Kettle Valley Ry. to cross C. N. Pacific Ry. at Hope, B.C., for construction purposes only, until October 31; all trains to be flagged over crossing by a flagman appointed by C.N.P.R. at expense of K.V.R.

24071. Aug. 12.—Authorizing Toronto Suburban Ry. to cross C.P.R. near Guelph, Ont., temporarily, for construction purposes only, between 6.30 a.m. and 6.30 p.m., pending installation of interlocking plant required by Oct. 15, trains to be flagged by day watchman, appointed by C.P.R. at expense of T.S.R.

24072. Aug. 12.—Authorizing Thorah Tp., Ont., to build highway crossing over C. N. Ontario Ry., between Cons. 2 and 3, C.N.O.R. to bear cost.

24073 to 24075. Aug. 12, 11.—Approving Bell Telephone Co.'s agreements with Campbell's Bay Rural Telephone Co., June 29, Zorra Telephone Co., July 22, and North Huron Telephone Co., July 22.

24076. Aug. 12.—Authorizing C.P.R. to build, at grade, its Virden-McAuley branch across Railway Ave. South, McAuley, Man., mileage 36.04.

24077. Aug. 12.—Authorizing C. N. Ontario Ry. to build across Arthur St., Port Arthur, Ont.

24078. Aug. 12.—Relieving C.P.R. from providing further protection at crossing of highway half a mile west of Adamsville station, Que.

24079, 24080. Aug. 13.—Authorizing G. T. Pacific Ry. forthwith to proceed with building of interchange track with C.P.R. at the Globe elevator site, Calgary, Alta.; Department of Trade and Commerce will pay G.T.P.R. \$14,000 towards cost; and also to commence forthwith and complete the branch to connect with Board of Grain Commissioners' elevator at Moose Jaw, Sask.

24081. Aug. 13.—Dismissing application of Tilbury North Tp., Ont., for order compelling Bell Telephone Co. to restore telephone office at Stoney Point.

24082. Aug. 13.—Ordering Canadian Northern Ry. to build farm crossing for S. Kilborn, Ochre River, Man.; work to be completed by Sept. 1.

24083. Aug. 13.—Authorizing Montreal Tramways Co. to build second track across C. N. Quebec Ry. on boulevard which the City of Maisonneuve is building on Pie IX, Avenue.

24084. Aug. 12.—Extending, to Oct. 15, time within which the C.P.R. may complete extensions to siding of Provincial Reformatory, Guelph Tp., Ont.

24085. Aug. 19.—Approving G. T. Pacific Branch Lines Co.'s plan, dated Aug. 14, showing connection with C.P.R. near the Globe elevator, Calgary, Alta.

24086. Aug. 16.—Authorizing the G. T. R. to build additional track across Queen St. South, Berlin, Ont.

24087. Aug. 14.—Rescinding order 22119, July 2, 1914, re location of Toronto Terminals railway between York St. and Don River, Toronto.

24088. Aug. 5.—Extending, to Sept. 1, time within which G. T. R. was directed to build interchange track with Campbellford, Lake Ontario & Western Ry. (C.P.R.) at Cobourg, Ont.

24089. Aug. 17.—Authorizing C.P.R. to build spur for Hull Iron & Steel Foundries, Ltd., Hull, Que.; work to be completed in three months.

24090. Aug. 13.—Approving C.P.R. plans, 25679-A, July 5, 25679-5, July 16, and 24707, Aug. 2, showing subway at Yonge St., Toronto.

24091. Aug. 12.—Authorizing C.P.R. to build spur across road allowances between Secs. 28 and 21, and across Winnipeg Electric Ry. (transmission line), on s. w. ¼, Sec. 28, and n. e., n. w., and s. e. ¼, Secs. 21, Tp. 14, R. 10, e.p.m., work to be completed within three months.

24092. Aug. 16.—Amending order 24000, July 27, re C.P.R. and G.T.R. bells to be installed at crossing of Eglinton Ave., York Tp., Ont.

24093. Aug. 17.—Authorizing G. T. R. to build extension of spur for Borden Milk Co., Norwich Tp., Ont.; to be completed within three months.

24094. Aug. 13.—Relieving G. T. Pacific Branch Lines Co. from erecting fences, gates, and cattle guards on its Prince Albert Branch from mileage 0 to 64, at different points in Saskatchewan.

24095. Aug. 16.—Relieving Canadian Northern Ry. from erecting fences along its right of way west of Tollerton, Alta., at five points; order to cease when vicinity becomes settled or improved.

24096. Aug. 14.—Relieving Nelson & Fort Sheppard Ry. (C.N.R.) from erecting fences, gates, and cattle guards from International boundary, south of Waneta, to Nelson, B.C.; order to cease when vicinity becomes settled or improved.

24097, 24098. Aug. 16.—Approving Bell Telephone Co.'s agreements with Molesworth Independent Telephone Co., Aug. 3, and South Plantagenet Rural Telephone Co., July 2.

24099. Aug. 13.—Approving proposed location of C.P.R. station at Marchwell, Sask.

24100. Aug. 17.—Relieving C.P.R. from erect-



the cattle guards along certain sections of the St. Lawrence Subdivision, in order to cease when vicinity becomes settled or improved.

Aug. 12. Approving plans, profiles, and specifications of the Water main No. 7, and detail plans of concrete culvert to be built between Bell Telephone Co. and Plummer Addition, Ont.

## The New Canadian Pacific Railway Station at Quebec.

The foundation stone of the new station which the C. P. R. is building at Quebec as a main station, was laid by the Mayor of the city, Aug. 12. The C. P. R. was represented by F. L. Wanklyn, General Executive Assistant, and other officials, the Lieutenant Governor and the Premier representing the province.

The plans show a building designed in a modern adaptation of the chateaux of the Loire, France, which is calculated to add to the architectural features of the city. The building, which is being erected at the corner of St. Paul and Henderson streets, will have as a frontage a large open paved plaza, approximately 300 x 200 ft., flanked on either side by broad sidewalks leading to the main entrance. Between the sidewalks and the building will be large spaces which will be planted with Lombardy poplars and blue spruce and other shrubs. The main building will be of Argenteuil granite, Deschambault limestone, and Citadel brick, with high sloping roof of copper. The main entrance, which will be from St. Paul St., will be 25 ft. wide. Above it will be a window about 10 ft. in height, of metal sash, divided into seven sections. At the crown of the arch will appear the arms of seven of the historic names of Quebec, viz., Montmagny, who was the first Governor of Canada, from 1636 to 1647; DeTracy, Viceroy of Canada, 1665; Beauharnois, Governor of Canada, 1726 to 1747; Montcalm, one of the French Generals defending Quebec when the English conquered Canada in 1759; Wolfe, the general who led the English to victory on the Plains of Abraham in 1759, and died on the battlefield; Frontenac, Governor of Canada, 1672; Talon, first Intendant of New France, 1665 to 1672. The main facade of the building will be dominated by a central tower with turrets at the angles, at the bases of which will be cartouches, bearing in one case the fleur de lys of France, and at the other the Tudor rose, the thistle and the shamrock of the United Kingdom of Great Britain and Ireland. High upon the roof will be an ornamental clock with a dial 8 ft. in diameter, over which will appear the city's arms.

The building will be L shaped, the central block 175 ft. long, and wing 200 ft. long.

At the entrance will be a lobby approximately 45 x 65 ft. and 60 ft. high, to be entirely of tapestry brick with ornamental work in faience tile. The room will be lighted from the St. Paul St. side and also from the roof, the spaces in the roof being filled with ceiling lights. The central ceiling light will contain a cartoon in leaded glass showing the Dominion of Canada, with the thousands of miles of the C. P. R. dominating the industrial and prairie sections marked in distinct colorings. The ceiling of the dome will be constructed entirely of faience tile with ornamental patterns arabesque in blue, red and gold. The main cornice of the big lobby will also be in faience tile, and will carry a series of cartouches symbolic of the C. P. R., viz., its hotel system, railways and steamships. The main floor will be divided into ticket offices, baggage room, parcel room, Customs offices, transfer, telegraph and news stand. From the vestibule a marble staircase will lead to the offices on the first floor which will be

24102. Aug. 18.—Authorizing London Railway Commission to take, in connection with London & Port Stanley Ry., for erection of repair shop and car barns, the fee simple in Lot 1, on south side of Philip St., and Lot 1, on north side of Trafalgar St., London, Ont.

24103. Aug. 19.—Approving agreement between Bell Telephone Co. and Plummer Addition Tp., Ont., Aug. 6.

occupied by the C. P. R., and space will also be provided for the accommodation of the National Transcontinental Railway. The main concourse will be 65 ft. by 125 ft. and 40 ft. high, constructed of tapestry brick with faience insertings in color. All of the ornamental work in this room will carry the characteristic ornaments of the French Chateaux and Dolphin and Tridents interspersed with the Tudor rose. Opening off the concourse will be the station agent's room and the usual conveniences. Train gates will separate the concourse from the train shed which will be on the same low principle as Windsor St. station in Montreal. There will be 11 tracks and the platforms will be well lighted. In the concourse near the train gates will be installed train indicators electrically illuminated.

The power house will be situated on the St. Paul St. side of the building. It will contain the necessary equipment to supply main station and the freight shed across the tracks towards the river.

The building was designed by M. H. E. Prindel, architect, Montreal, and the construction is being supervised by D. H. Mapes, Engineer of Building Construction, C. P. R., and T. E. Vidette for the contractors, the Downing Cook Co. This description is abridged from the Quebec Chronicle.

## National Transcontinental Railway Operation.

The operation of the National Transcontinental Railway by the Dominion Government is raising some questions affecting its connection with the Intercolonial Ry. The first of these is at Moncton, where for several miles the two lines run side by side westerly. It is reported that in order to facilitate traffic, and to reduce cost of maintenance it is proposed to build about a mile of line to connect the two tracks, and to run all the traffic over one of the lines.

The second matter affects St. John, N. B., and was discussed with the Minister of Railways on the occasion of his recent visit there. The Minister is reported to have said that the Department's engineers were studying the problem of better transportation connection with St. John, in connection with the operation of the N. T. R., and the engineers seemed to favor an entrance to the city by the western side of the harbor. When the matter had been further considered, F. P. Gutelius, General Manager, would discuss the matter with the Board of Trade and the City Council. (Aug., pg. 307.)

**Rogers Pass Tunnel Contractors' Suit.**—In the original hearing of the action brought by McIlwee Brothers, against Foley, Welch and Stewart, general contractors for the construction of the five mile tunnel on the C. P. R. at Rogers Pass, B. C., for \$527,000, the court awarded just over \$30,000 damages. The plaintiffs appealed and judgment was given by the British Columbia Court of Appeal, Aug. 10, under which the plaintiffs become entitled to practically the full amount claimed. It is expected that Foley, Welch and Stewart will carry the case to the Supreme Court of Canada.

## American Association of Passenger Traffic Officers.

At the last annual meeting at San Francisco, the following Canadian railway officials were placed on the various committees:

Official Digest of Fares and Divisions—G. C. Wells, Assistant to Passenger Traffic Manager, C.P.R., Montreal.

Adjustments of disputes relative to division of passenger fares—W. P. Hinton, Assistant Passenger Traffic Manager, G.T.R., Montreal.

Printing of folders and other advertising matter and economical distribution thereof—W. P. Hinton.

Additional charge for checking baggage—W. P. Hinton, W. H. Snell, General Passenger Agent, Eastern Lines, C.P.R., Montreal.

Additional fares for sleeping and parlor car passengers and additional charge for passenger occupying section in sleeper—G. T. Bell, Passenger Traffic Manager, G.T.R., Montreal.

Economies in operation of city ticket offices and in passenger service—C. B. Foster, Assistant Passenger Traffic Manager, C.P.R., Montreal.

Committee on adjustment of disputes relative to division of passenger fares—W. P. Hinton, W. H. Snell.

Standing Territorial Committee, Eastern Canadian Passenger Association—W. P. Hinton, C. E. Benjamin, General Passenger Agent, Trans-Pacific Service, C.P.R., Montreal; F. F. Backus, General Traffic Manager, Toronto, Hamilton and Buffalo Ry., Hamilton, Ont. (since appointed Assistant to President).

Territorial Membership Committee, Eastern Canadian Passenger Association—W. H. Snell, W. P. Hinton.

**Harvesters' Excursion Rates.**—In connection with the annual harvesters' excursion rates to Manitoba, Saskatchewan and Alberta, representations have been made to the railway companies by the Vancouver Board of Trade, asking that these reduced rates be made applicable from British Columbia. H. W. Brodie, General Passenger Agent, C. P. R., Vancouver, replying to the Board, Aug. 8, on behalf of the railway companies interested in the movement of laborers to the Northwest, said that all arrangements were made after consultation with the governments of the three provinces interested. These provinces do not desire excursions run from British Columbia, fearing that there would be an influx of men unsuited to harvest work. The railway companies have suggested that if a shortage of labor be feared, and the prairie provinces will send representatives into British Columbia to select the class of laborers required, the companies will place special rates in effect for their benefit. The statement made during the discussion at the Board's meetings that reduced rates for harvesters were in effect from U. S. points, was incorrect.

**Hudson's Bay Co.'s Report.**—At the annual meeting in London, Eng., August 5, Sir Thomas Skinner, Chairman, who is also a director of the C.P.R., stated that in view of the unfavorable results of the past year, and the uncertainty regarding the duration of the war, which had caused considerable interference with the company's business, the directors had decided not to recommend a dividend on the ordinary stock.

**The Intercolonial Ry. Office Staff** at Moncton, N.B., contributed a percentage of their July salaries for the provision of a machine gun for the Canadian Expeditionary Force.



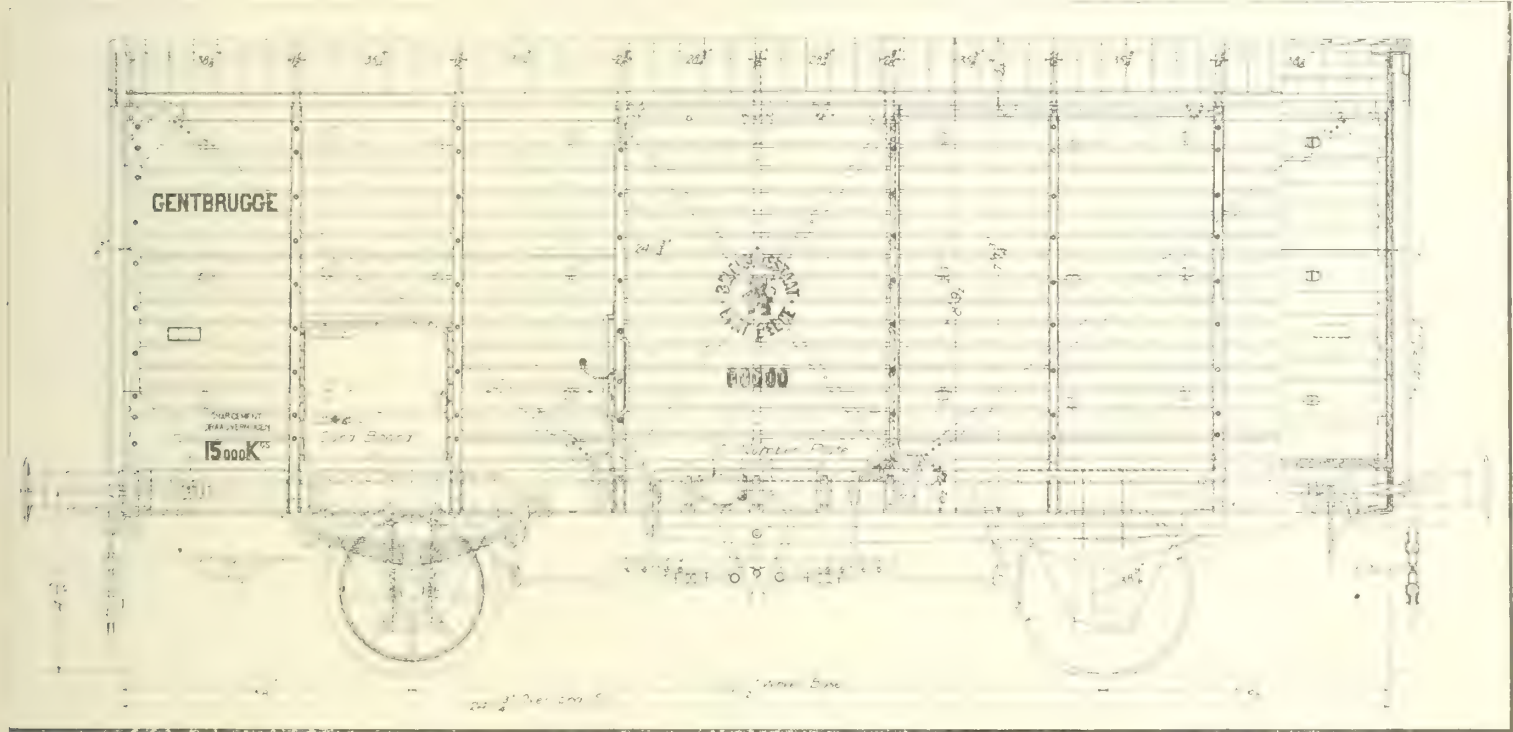
Freight Cars for the Belgian State Railways Being Built in Canada.

St. John and Quebec Railway Taken Over by the New Brunswick Government.

As previously stated in Canadian Railway and Marine World, the Railway Executive Commission of the British War Office has ordered 1,200 box cars from the Canadian Car and Foundry Co. for the Belgian State Railways. From the viewpoint of this continent they are very novel in design, as the accompanying illustration shows. They will be of a steel frame, wood sheathed type, with a capacity for 15 metric tons. (A metric ton is slightly less than a long ton, or 2,205 lbs.) The underframe construction will resemble that of the steel frame freight car used on this continent, except that there will be no body bolster arrangement, as the cars will be mounted on two single trucks directly from an intermediate sill, which will be the heaviest member of the underframe. This intermediate sill will be a 10x3 51-64x29-64 ship channel directly over the journals. End sills, the full width of the car, will be

transmitted to the wheels through an 11-leaf spring of 3 15-16x15-32 in. steel plate, through brackets and links from the under side of the intermediate sill, and then to the journals. The brake rigging will be of the hand type, braking on one side of the car only. Two curved links suspended under the centre of the car will have on their inner lower faces two blocks, which, when depressed by the brake lever running to the end of the car, will force out the arms, applying the brake shoes to the wheels. The couplings will be on the screw arrangement, as shown at the righthand end of the illustration. The drawbar pull will be transmitted through the car by a central rod, which will have a clear passage between the centre sills. A cushioning action for the draught equipment will be placed on this rod behind the end sill, and will consist of a volute spring. The end posts will be 4x2 47-64x17-64 in.

Under the provisions of the act relating to the St. John and Quebec Ry. passed by the New Brunswick Legislature last session, which came into force upon proclamation June 9, the company was required within 20 days thereafter to make arrangements satisfactory to the Government for the completion of the line. The company failed to make such arrangements, and an order-in-council was passed Aug. 4, and made public, Aug. 18, putting in force the various provisions of section 4 of the act. Under this section, the order-in-council declares:—"That all shares of common stock of the company issued prior to the publication of this order vest in the Crown, to be held in behalf of the province, free from all liens, etc., except that in favor of the Prudential Trust Co., in respect of 17,947 shares, with power to transfer such shares or any of them." The directors and officers of the company



Elevation of 15 Metric Ton Freight Car for Belgian State Railways.

10x3 19-32x19-32 ship channel, and will support the buffers, placed 5 ft. 7 in. centres at 41 15-16 ins. above the rail. The centre sills will be 3x1 15-16x5-16 in. channels, extending from end sill to end sill, flange inward, at 17 1/4 ins. back to back of web. These central sills will be reinforced by similar channel sections on either side, running diagonally from the juncture of the intermediate and end sills to the centre sill, about a third the length from the end, passing alongside the centre sill, to which they will be riveted in the central section, and branching off diagonally to the other corner. The side sills will be 3x3x5-6 in. angles. Following are the principal particulars of the cars:

Capacity	15 metric tons
Gauge	1 ft. 8 1/2 in.
Trucks	Single
Wheels	38 in. rolled steel
Wheel base	13 ft. 1 1/2 ins.
Length over end sill	24 ft. 1 3/4 ins.
Height of car body	8 ft. 9 1/2 ins.
Width inside	8 ft. 4 1/2 ins.
Width over side sills	8 ft. 6 1/2 ins.

The rolled steel wheels will be carried on steel axles. The car weight will be

beams, and the side posts 2 13-32x1 3/4x11-32 in. channels. The side sheathing will be yellow pine or Douglas fir, bottom board 1 5/8 ins. thick, second and third boards 1 3/8 ins. thick, balance 1 in. thick. The end lining will be yellow pine or Douglas fir 1 3-16 ins. thick. The side frames will be braced by diagonals. The roofing will be 13-16, in. white or red pine, or Douglas fir, covered with canvas, and supported on steel channel type carlines. There will be a side door on each side, supported on bottom rollers. A step will be provided at each door. Delivery is to commence at an early date.

**Railway Lands Patented.**—Letters patent were issued during July for Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:—

	Acres.
Calgary and Edmonton Ry.	2,069.60
Canadian Northern Ry.	1,608.57
Grand Trunk Pacific Ry.	6.10
Qu'Appelle, Long Lake, and Saskatchewan Rd. and Steamboat Co.	3,835.00
Total	7,518.67

acting heretofore are disseized of their offices, and the following are appointed to act on behalf of the Province, until the holding of the annual meeting:—President, Irving R. Todd, St. Stephen; Secretary, E. Girouard, Moncton; Treasurer, J. D. Palmer, Fredericton; additional directors, W. S. Fisher, St. John, and Richard Leary, Richibucto.

**Steel Rails for Alberta.**—In Canadian Railway and Marine World for August it was stated in a shipping letter from Fort William that a contract had been made for the delivery of about 45,000 tons of steel rails there. We have since ascertained that these are for the J. D. McArthur Co., Limited, contractors, Winnipeg, who have ordered from 40,000 to 50,000 tons 60 lbs., A.S.C.E. section, from the Algoma Steel Corporation for use principally on the Alberta and Great Waterways Railway. At least 35,000 tons will be used north of Edmonton, but some portion of the order may be sent to British Columbia. They will be shipped from Sault Ste. Marie to Fort William by water.



# Canadian Pacific Railway's Annual Report.

Following is the report for the year ended June 30, addressed to the shareholders over the signature of the President, Sir Thos. G. Shaughnessy.

The accounts for the year ended June 30, show the following results:—

Working Expenses	\$98,865,209 78
Wages	65,290,582 49
Net earnings	\$33,574,627 29
Interest on bonds	10,446,509 83
Surplus	\$23,128,117 46
Contribution to Pension Fund	125,000 00

Deduct net earnings of Pacific Coast steamships, commercial freight, and news department, transferred to special income account	1,494,151 49
	\$21,508,965 97

From this there has been charged a half-yearly dividend on preference stock of 2%, paid April 1	\$ 1,605,412 80
And a quarterly dividend on ordinary stock of 1%, each, paid Jan. 2, April 1, and June 30	13,650,000 00
	15,255,412 80
	\$ 6,253,553 17

From this there has been declared a second half-yearly dividend on preference stock, payable Oct. 1	\$ 1,613,638 42
And a fourth quarterly dividend on ordinary stock 1%, payable Oct. 1	4,550,000 00
	6,163,638 42

Leaving net surplus for the year \$ 89,914 75  
In addition to the above dividends on ordinary stock, 3% was paid from special income.

Following are details of special income for the year:—

Following are details of special income for the year:  
Balance June 30, 1914 \$5,046,812 46  
Less dividend paid Oct.

1. 1914	1,950,000 00	\$ 3,096,812 46
Interest on proceeds land sales	64,587 54	
Interest on deposits and loans	1,466,096 67	
Interest from Minneapolis, St. Paul & S. S. Marie Ry. bonds	159,720 00	
Interest from Mineral Range Ry. bonds	50,160 00	
Interest from Toronto, Hamilton & Buffalo Ry. bonds	10,840 00	
Interest from Montreal & Atlantic Ry. bonds and other securities	107,902 09	
Interest from Berlin, Waterloo, Wellesley & Lake Huron Ry. bonds	17,040 00	
Interest from St. John Bridge & Ry. Extension Co. bonds	6,200 00	
Interest from Esquimalt & Nanaimo Ry. bonds	193,280 00	
Interest from Dominion Atlantic Ry. extension debenture stock	56,940 00	
Interest from Dominion Atlantic Ry. second debenture stock	36,986 67	
Interest from Hull Electric Ry. ..	75,000 00	
Dividend on Esquimalt & Nanaimo Ry. stock	125,000 00	
Dividend on St. John Bridge & Ry. Extension Co. stock	70,000 00	
Dividends on Minneapolis, St. Paul & S. S. Marie Ry. common stock	890,645 00	
Dividends on Minneapolis, St. Paul & S. S. Marie Ry. preferred stock	445,326 00	
Dividends on West Kootenay Power & Light Co. common stock	55,000 00	
Dividends on West Kootenay Power & Light Co. preferred stock	3,850 00	
Dividends on Consolidated Mining & Smelting Co. stock	209,520 00	
Dividend on Berlin, Waterloo, Wellesley & Lake Huron Ry. stock	12,500 00	
Earnings from ocean steamships and hotels	4,370,280 41	
Revenue from interest in coal mine properties	544,294 26	
Extraneous mail earnings	364,733 61	
Net earnings of Pacific Coast steamships, commercial telegraph, news department	1,494,151 49	

Space rented in office buildings	139,277 95
	\$14,066,144 15
Less payments to shareholders in dividends: Jan. 2, April 1, and June 30	5,850,000 00
	\$ 8,216,144 15

From this a dividend has been declared payable Oct. 1

The working expenses for the year were 66.04% of the gross earnings, and the net earnings 33.96% compared with 67.32 and 32.68%, respectively, in 1914.

Four per cent. consolidated debenture stock to the amount of £611,797 was created and sold, and the proceeds were applied to the acquisition of the securities of other railway companies whose lines constitute a portion of your system, the interest on which had, with your sanction, been guaranteed by your company. Four per cent. preference stock to the amount of £504,914 was created and sold for the purpose of meeting capital expenditures that had previously been sanctioned by you.

During the year 231,297 acres of agricultural land were sold for \$3,742,115.00, an average of \$16.17 an acre. Included in this were 6,550 acres of irrigated land which brought \$55.22 an acre, so that the average price of the balance was \$15.04 an acre.

All of the company's outstanding first mortgage 5% bonds, amounting at the end of the fiscal year to £2,638,900, were satisfied and retired at or before their maturity, July 1, excepting a few that had not been presented for redemption. An amount sufficient to take up these bonds, as they come in, has been deposited with your bankers, and the trustees have been asked to certify the satisfaction of the debt and to have the mortgage securing them formally cancelled. Outstanding bonds of £233,200, of the Shuswap and Okanagan Ry. Co., whose line is leased to your company for 999 years, were also acquired during the year, and have been deposited with your treasury securities.

As you were informed at a previous meeting, your directors have had under consideration for some time the desirability of transferring to a steamship company your steamships engaged in traffic on the Atlantic and Pacific oceans, so as to more effectually separate your railway and steamship finances and operations. To that end, a company has been organized under the laws of Great Britain, known as The Canadian Pacific Ocean Services, Limited, with an authorized capital of £2,000,000 sterling, having for its purpose, amongst other things, the acquisition and operation of ocean steamships and the interchange of traffic with your railway lines and others. The requisite extension of your company's charter powers has been secured to enable it to hold stock and securities of the Canadian Pacific Ocean Services, Ltd., and to guarantee payment of the principal and interest of such securities as may be issued with your consent. It is proposed that the Canadian Pacific Ocean Services, Ltd., shall purchase and take over your interest in all of the steamships and their appurtenances engaged in ocean traffic, as well as those of the Allan Line Steamship Co., which has been under your control for some time. A moderate estimate of the value of the steamship property involved in the transaction, after making due allowance for depreciation, is \$23,500,000. Your directors recommend that as a consideration for the steamships and their appurtenances to be sold and delivered by your company, and for the capital stock of the Allan Line Steamship Co., carrying with it all that company's steamship and other properties,

you accept as fully paid the capital stock of the Canadian Pacific Ocean Services, Ltd., namely, £1,962,910, being all excepting the shares necessary to qualify the directors of the steamship company, and in addition, 5% first debentures or debenture stock of the Canadian Pacific Ocean Services, Ltd., to the amount of £2,865,860 sterling. The transaction has been completed on this basis, subject to your approval.

Six of the company's older class steamships, namely, the Montrose, Mount Royal, Montezuma, Montcalm, Tyrolia and Ruthenia were taken by the Imperial Government in November last, at a price that has not yet been fixed by the Admiralty, and the steamship Empress of India, after 25 years service on the Pacific Ocean, was sold for £85,000 and converted into a hospital ship. Two large modern steamships that were under construction at Belfast were purchased by the company at a cost of about £700,000, for delivery in July and October of this year. Pressure of other work, however, delayed their completion, and it will be probably some months before they are ready for service.

The appropriations made by your directors for expenditures on capital account during the calendar year were comparatively small, aggregating only \$3,546,600. In this amount are included the estimated expenditure on Roger's Pass tunnel in the Selkirk Mountains, \$1,350,000; passenger and freight terminals at Quebec, \$300,000; and passenger station with approaches, at North Toronto, \$400,000. The balance of the amount is made up of works of minor importance on all sections of the railway.

The Victoria Rolling Stock and Realty Co.'s equipment securities, to which reference was made in the last annual report, were disposed of during the year at a price sufficient to repay the amount advanced by the company.

Uncontrollable conditions caused an abnormal decline in the gross revenue of your railway lines for the year, and, although the working expenses were very substantially reduced, the net earnings were \$8,851,300 less than in the previous year, leaving a margin barely sufficient to meet the customary distribution to shareholders. Against this your special income, from which a portion of the dividend is paid, was \$2,381,461 greater this year than last. Your directors were of opinion that in the circumstances there was no good reason for making any change in the rate of dividend, and acted accordingly.

Vice President McNicoll, after more than 40 years continuous connection with the company and one of its acquired lines, was compelled by failing health to relinquish the arduous duties of his office, and he, therefore, resigned in December last. The resignation was accepted after the directors had expressed in a most pronounced way their high appreciation of Mr. McNicoll's services to the company, and their personal esteem and regard for him. George Bury, Vice President in charge of the company's western lines, was promoted to fill the vacancy caused by Mr. McNicoll's retirement, and he was also elected a member of the board of directors.

The under mentioned directors will retire from office at the approaching annual meeting. They are eligible for re-election:—Sir William C. Van Horne, R. B. Angus, Sir Edmund B. Osler, Sir Herbert S. Holt.

The Canadian Pacific Ry. has not killed a passenger in a train accident during the past two years.



## Railway Development.

### Projected Lines, Surveys, Construction, Betterments, Etc.

**Alberta and Great Waterways Ry.**—Grading is reported to have been completed from the end of steel mileage 135, or 21 miles beyond Lac La Biche, Alberta, for 60 miles, to tp. 75, range 8, west of the 4th meridian. The route is said to be nearly all through muskeg for this distance, but there is a fall towards Christiana Lake. The ballasting of the line from Carbondale to Lac La Biche is reported to be practically completed. The ballast is obtained from a pit at mileage 84. It is expected a regular service by means of a gasoline car will be put in operation over the line to Lac La Biche, towards the end of September. (June, pg. 213.)

**Alma and Jonquieres Ry.**—The Department of Public Works is being asked to approve of plans of a bridge across the Little Discharge of Lake St. John, near St. Joseph d'Alma, Que., under the provisions of the Navigable Waters Protection Act, Sec. 7. (May, pg. 170.)

**Athabasca and Vermillion Ry.**—We are officially advised that preliminary survey work for this projected railway is well under way. The railway is projected from Athabasca to Fort Vermillion, about 50 miles above Peace River Chutes on Vermillion Falls. A direct line between these two points is 300 miles, and the present survey is for securing the shortest and best route. F. P. Wilson is engineer in charge, and F. D. Rice is assistant engineer. (Aug. pg. 304.)

**British Columbia to Portland, Ore.**—A press report says that a statement was made, in evidence by General J. M. Ashton, before the Pierce County Board of Equalization at Tacoma, Wash., Aug. 8, to the effect that a Canadian railway company had completed arrangements to build a railway from British Columbia to Tacoma and Portland, with large terminal facilities in Tacoma, that the arrangements were interfered with by the war, but that the negotiations were to be resumed after the conclusion of peace. The options to the Tacoma property required for terminal purposes, General Ashton said, were allowed to expire July 31.

**Fraser River Terminal Co.**—A special committee of the Vancouver Board of Trade has been appointed to consider the project for the establishment of union terminals for passengers and freight for all railways entering Vancouver, B.C. The project is being put forward by the Union Terminal Co. of Seattle, Wash., representatives of which had a meeting with the committee in Vancouver, Aug. 2. (May, pg. 171.)

**Intercolonial Ry.**—The Intercolonial Ry. and the National Transcontinental Ry. run parallel for about 11 miles out of Moncton, N.B. As the latter line is being operated under Government management, it is proposed, according to press reports, to connect the two lines at mileage eleven for convenience of operation and economy in maintenance. The connection will necessitate the construction of about 0.75 mile of new track, involving one cut and one fill. Nothing has been decided as to when the work will be done. The Minister of Railways informed representatives of St. John, N.B. City Council, on his recent visit of inspection that there was no money available for the undertaking of any new works anywhere along the line.

The Main St. subway under the I. R. C., forming part of the track elevator works in Moncton, N.B., has been completed, and was used for pedestrian traffic Aug. 10. (Aug., pg. 304.)

**Kettle Valley Lines.**—We are officially advised that a contract has been let to A. Guthrie & Co., Inc., for building 7,500 lineal feet of snow sheds on the section of the line along the Coquihalla River Valley. About 13,000,000 ft. of lumber will be required for the erection of the sheds. The construction will be of the hillside style, which is for passing the snow over the track on its course to the valley below. The contractors are on the ground, and work has been started. The same contractors, it is reported, will also put in on the section the concrete abutments and one pier for a bridge to consist of two steel spans having a total length of 285 ft. (Aug., pg. 304.)

**Lake Huron and Northern Ontario Ry.**—In Canadian Railway and Marine World for August, reference was made to a press report that this company had given a contract to the National Engineering Co. of Cleveland, Ohio, to build a line from Sault Ste. Marie to a junction with the National Transcontinental Ry., but that the same would not go into effect until finances had been arranged. It was also stated that we were advised that the report was premature. We are now officially advised that no such contract has been made, and as far as the management knows, none will be made.

**Pacific Great Eastern Ry.**—Press reports state that at July 30, track had been laid to a point 14 miles beyond Lillooet, from Squamish, B.C., and that the bridge work between that point and Clinton was being pushed forward rapidly. It is expected to have the track laid to Clinton early in the fall, and to Hundred Mile House by the end of the year. The grading on 438 miles between Squamish and Fort George is reported to be 98 per cent. completed. Nothing is being done at present on the line between North Vancouver and Squamish, 39.7 miles beyond the present track end, 12.7 miles from North Vancouver, on which a train service is being operated. A train service is also being operated from Squamish to Lillooet, 120 miles. (July, pg. 255.)

**Peace River Tramway and Navigation Co.**—We are officially advised that it has been definitely decided not to proceed with the construction of either of the tramways at the Peace River Chutes or the Slave River Falls this year. The right of way for the power tramway will, however, be cut this fall. (July, pg. 255.)

**Reid Newfoundland Co.**—Train services have now been put in operation on the extensions to Heart's Content and Trepassay. (July, 1914, pg. 324.)

**St. John and Quebec Ry.**—Construction on what is called "the missing link" on this railway is being proceeded with in Fredericton, N.B. The work was undertaken after considerable negotiations between the company and the Intercolonial Ry. officers and C.P.R. interests. The estimated cost was \$50,000, and it was expected that the work would have been completed early in August. The work is reported to be proceeding slowly, that it is not now expected it will be finished until Nov., and the cost is reported to have gone up to over \$60,000.

On his recent visit to St. John, N.B., the Minister of Railways is reported to have said the cost of the proposed bridges across the St. John and the Kennebecasis Rivers would be very heavy. The best plan for completing the line might prove to be the extension of the line to Welsford and then on to the city. A Fredericton, N.B., press

report quotes the Premier of New Brunswick as stating that borings for the proposed bridge at The Mistake would be started immediately at Gordon's Bluff. (June, pg. 212.)

**Van Buren Bridge.**—The bridge across the St. John River between St. Leonards, N.B., and Van Buren, Me., together with its railway connections in Canada and Maine, has been taken over for operation by the Bangor and Aroostook Rd., and the jurisdiction of the officials of that company has been extended over it in their respective departments. (July, pg. 257.)

### Traffic Orders by the Board of Railway Commissioners.

**Cleaning and Disinfecting Stock Cars.**  
General order 147. July 29. Re application of Toronto Livestock Exchange, Livestock Shippers' Association of Ontario, and others, for an order disallowing a charge of \$2.50 a car for cleaning and disinfecting single-deck stock or box cars, and \$4 for double-deck stock cars, which the railway companies proposed to collect by tariffs published and filed, the said tariffs having been suspended by the Board pending a hearing. It is ordered that the railway companies collect a toll not exceeding 75c. for cleansing and (or) disinfecting any car in which live stock has been carried when the said work is done by the railway companies; and that the said toll may lawfully be an addition to the charges, as published in the companies' tariffs, for transportation of the live stock unloaded from the said cars. And it is also ordered that any tariffs of the said railway companies showing a toll, or tolls, for cleansing and (or) disinfecting live stock cars in excess of the toll of 75c. a car, be disallowed; and that order 23927, July 2, be rescinded.

### Progress of Rogers Pass Tunnel Construction, Canadian Pacific Railway.

The following table shows the progress made from July 1 to July 29, also the total progress to July 29, for which we are indebted to J. G. Sullivan, M. Can. Soc. C. E., Chief Engineer, C. P. R. The figures give the number of feet.

EAST END.	Progress.	Total.
Pioneer heading .....	612	10,740
Main heading .....	532	6,544
Main tunnel .....	660	5,216
WEST END		
Pioneer heading .....	639	8,870
Main heading .....	868	7,469
Main tunnel .....	722	3,754

**The Canadian Pacific Ry.'s Freight Department,** Ontario Division, has removed its offices from Union Station, Toronto, to the 12th floor of the C.P.R. building at King and Yonge Streets, the officials who have removed being M. H. Brown, Division Freight Agent; L. Mulkern, District Freight Agent; G. D. Robinson, Export and Import Freight Agent; C. W. McMullen, City Freight Agent; J. Jolly, W. Hollyman and D. McColl, Soliciting Freight Agents, also the rate clerk and the tracing clerk.

**The Canadian Ticket Agents' Association** will hold its 29th annual meeting at Denver, Col., Oct. 18 to 21, both inclusive. The business meeting will be held Oct. 18, and in the evening of that day there will be the customary social gatherings. For the following three days there will be a number of sight seeing trips and perhaps a day's excursion into the mountain region.



## Maintenance Labor on Western Lines, Canadian Pacific Railway.

By D. Allen C. Coleman, Assistant General Manager, Western Lines, Canadian Pacific Railway.

The C. P. R. western lines, comprising 7,140 miles of single main track and 973 miles of double main track, have the divisional organization. The district superintendent is responsible for all maintenance of way work, and the resident engineer, bridge and building master, roadmaster and signal supervisor on a district report to him.

European laborers are employed mostly for maintenance of way work, these consisting of Galicians, Scandinavians, Italians and Russians. The remaining portion of our maintenance of way laborers are Canadians, Americans, Scotchmen, Irishmen and Englishmen. The laborers are collected in such cities as Montreal, Winnipeg and Vancouver through private labor agencies. No employee of the company is kept at these private labor agencies to accept shipments of men for employment nor is there a company labor bureau. The custom in busy seasons has been to ask the labor agency to supply a cer-

pass to the nearest town and free transportation in baggage cars for the necessities of life. The following transportation privileges also apply to the maintenance of way employees and his direct dependents:

After 6 months service, pass annually over the district;

After 1 year service, pass annually over the division;

After 3 years service, pass annually over the system;

After 5 years service, pass over foreign lines.

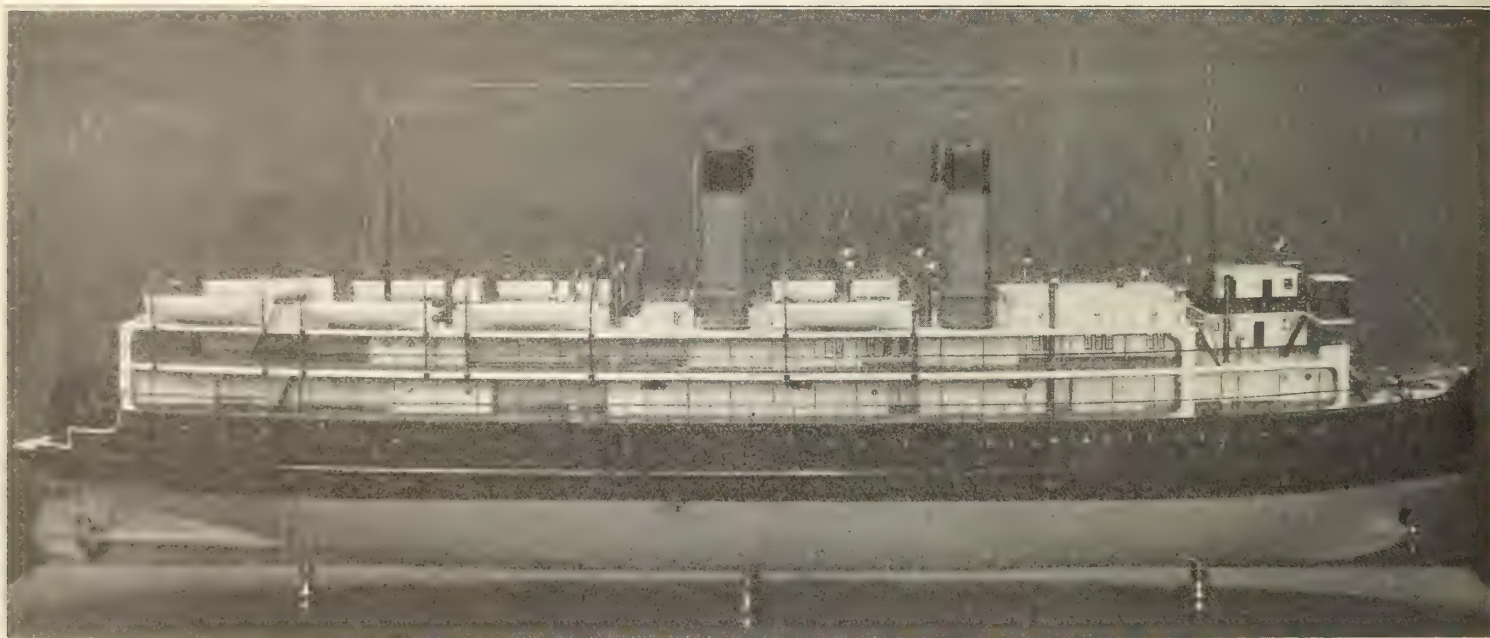
The section foreman is allowed to use old ties for fuel and is provided with a deep well, pipe line connection, or suitable water storage facilities where it is practically impossible to obtain water by drilling or other means. Water for the storage facilities is provided by way freight trains. Permanent employees also have the benefit of the pension rules and regulations as a reward of long

should he be retained in the service after such date. For example, if an employee has been in the service for 40 years and received on an average \$60 a month for the last 10 years, the pension allowance will be 40% of \$60, or \$24 a month. No pension allowance is authorized less than \$20 a month, however.

If a section foreman wishes to purchase a motor engine, the company stands the expense of installation on a reinforced hand car and supplies the foreman with 10 gallons of gasoline a month with which to operate his car. The foremen furnish their own repair parts. Power hand cars are not used on mountainous portions of the line. Section men are furnished a bunkhouse, where they provide their own food in many cases. A good many of the section foremen provide table board for the men on their sections.

It is not the custom to retain all of the section force in the winter as in the summer, but a man who is laid off on account of reduction is given preference when taking on additional men in the spring.

For promotion it is the practice to have each superintendent furnish a list of men



Model of Screw Ice Breaking Railway Ferry Steamship Prince Edward Island.

This vessel, which has been built for the Dominion Government by Sir W. G. Armstrong Whitworth & Co., Ltd., Newcastle-on-Tyne, Eng., will be operated by the Canadian Government Railways across Northumberland Strait between Cape Tormentine, N.B., and Carleton Point, P.E.I., about nine miles. The Government has acquired the New Brunswick & Prince Edward Island Ry. from Sackville to Cape Tormentine, and is building a short branch of the Prince Edward Island Ry. to Carleton Point. It is the intention to widen the P.E.I.R. to standard 4 ft. 8½ ins. gauge from its present 3½ ft. gauge, so that goods may be transported in cars between the mainland and the island without transfer. Complete descriptions of the vessel, with plans and profile, were given in Canadian Railway and Marine World for Sept., 1913, pg. 444, and Nov., 1914, pg. 518, and the issue of Aug., 1915, contained exterior and interior views.

tain number of men for extra gang or track section work. These men are transported free to the point of work in charge of a constable, who remains in charge until the men are turned over to the roadmaster under whose direction they are to work. The men's pay begins when they actually commence to work.

The section foreman is provided with a substantially built house of 6 rooms, generally constructed on a concrete foundation and affording a basement. A rental of \$5 a month is usually charged, which amount is absorbed in the maintenance expense of the dwelling from time to time. Seventy five per cent. of the section foremen are provided with section houses. The section foreman is also allowed the privilege of using any ground on the right of way in the vicinity of his house for garden purposes. At outlying points the foreman is allowed a market

years of faithful service. This system calls for no contributions from the employees themselves. The company considered that voluntarily establishing a system under which a continued income will be assured to those who after years of continuous service are by age or infirmity no longer fitted to perform their duties, and without which they might be left entirely without means of support, would tend to build up amongst them a feeling of permanency in their employment and thus create an enlarged interest in the company's welfare and a desire to remain in and devote their best efforts and attention to the company's service. The pension allowance authorized is granted upon the following basis: For each year of service an allowance of 1% of the average monthly pay received for the 10 years preceding retirement, or preceding the date upon which the company employee attained the age of 65 years,

whom he considers would qualify as foremen. The work and habits of these listed men are carefully watched by maintenance of way officers, and promotions are made from among them, due consideration being given to seniority.

The extra gangs are comfortably housed in boarding cars and supplied with wholesome food, usually furnished by a boarding car contractor at a very reasonable rate per week. Such a contractor has his own traveling inspector, who investigates any complaint that may be made. The company's local officers also give this commissary feature close supervision, as it is realized that good food tends to make more satisfactory labor conditions and consequently helps greatly in prosecuting betterment or construction work.

The bridge and building crews have similar privileges to those of section and



extra gang men. The commissary end of the boarding cars of these crews is frequently undertaken by the foreman of the crew, each man paying his share of the expense or else paying a fixed weekly charge to the foreman for his provisions and other services. Pumpmen are provided with cottages near the pump houses at a nominal rental.

All officers concerned with maintenance of

way work are impressed with the fundamental truth that in order to derive maximum results at a minimum cost, frequent and intelligent supervision is essential over the constantly changing organization of the members of the section crews, many of whom have but a scant knowledge of the English language.—Railway Engineering and Maintenance of Way.

## Edmonton, Dunvegan and British Columbia Railway Freight Tariffs.

Sir Henry L. Drayton, Chief Commissioner, Board of Railway Commissioners, gave the following judgment, Aug. 2, respecting the Edmonton, Dunvegan & British Columbia Ry. freight tariffs:—

"This case was first heard at Edmonton, May 28. The tariffs in question had already been dealt with by an interim judgment of the Board, of Mar. 26, further consideration being required by the judgment which adopted the tariffs then filed, and which were based on the Mountain Scale. Copies of the judgment and notices of the hearing were sent to all parties who appeared to be interested. No objections to the company's proposals were advanced on behalf of anybody at the hearing at Edmonton. That place is, of course, largely interested in the development of the northern country served by this railway, and its Board of Trade wrote this Board as follows,—

"In reference to your communication of May on the above subject, I beg to advise that this matter was submitted to a general meeting of the Edmonton Board of Trade to-day. The meeting was very representative of the commercial interests of Edmonton, and the members had been specially advised by mail that the E.D. & B.C. tariffs would be submitted for consideration. After somewhat exhaustive consideration, it was decided by resolution that this Board of Trade would make no protest at present against the tariffs recently filed by the E.D. & B.C.R. and temporarily approved by the Board of Railway Commissioners. A resolution to this effect was carried unanimously."

"The company operates under a Dominion charter, but is one which is being financed largely by guarantees of the Province of Alberta, which province is of course directly interested in the opening up and colonization of its northern territory. The Provincial Government was notified of the hearing at Edmonton, but took no part, leaving the whole question in the Board's hands. Apart from any objections, the Board was of the view that very special reasons would have to be advanced as to why the Mountain Scale should be used. It was recognized, of course, that with a new line running into a new country and enjoying no through business, that the ordinary Prairie Scale would, in the first instance, be too low, and the Board's Chief Traffic Officer worked out an intermediate scale between the Prairie and the Mountain scales. A copy of the rates worked out on this scale was given to the company's officials to say whether or not they could operate on the reduced scale. In addition to this the company was instructed that in any event special commodity rates must be filed on the articles which the country could produce, such as grain, hay, forest products, dairy and packing house products, cordwood, building material, etc., and the hearing was adjourned to be resumed at Calgary on June 9. The position taken by the company's officials at the later hearing was that it would be impossible to operate under any lower tariff than the Mountain Scale, but that lower rates on grain than suggested by the Board could be given with the company operating generally on the reduced scale.

"The Company has filed special commodity rates applying locally on grain, forest products, dairy and packing house

products, vegetables, live stock, hay, straw, coal, cordwood, and building material. These tariffs are based on the Prairie Scale. They are satisfactory and are as low as can be required. The company has also filed a proper and appropriate distributing tariff on general merchandise, applying from Edmonton, the rates in this case, however, being scaled down from the Mountain Scale. The matter has stood awaiting the company's filing of through grain rates to the head of the Lakes, as promised. The Board is today in receipt of a letter from Mr. McDonald, the Railway's Traffic Expert, in which he advises the Board that rates will be put in effect by the company so as to permit movement from Jarvie to Lake Superior ports at 29c. per 100 lbs., from High Prairie 36c., McLennan 37c., and from Fowler, the terminus, 38c. These rates are higher than the first rates I suggested at the hearing, which was a rate from shipping point to destination of 0.395c. per ton per mile, with 1c. per 100 lbs. added as an extra to cover cost of transferring at Edmonton. On the higher possible basis discussed, the rate from High Prairie, however, would be 39½c. This rate was thought by the Board to be very high, so high indeed that it represented the limit that could be considered. While the rate submitted of 36c. is not as low as the first rate considered, it is 3½c. lower than the other possible combination, and I think may be adopted as satisfactory until traffic conditions are developed so that the actual results may be fully considered.

"The company has received a guarantee from the province of \$20,000 a mile. The province is satisfied that under its supervision this money has actually been expended. The evidence supplied by the company is to the effect that the capital stock of \$250,000 is not watered. Large advances have been made to the company to enable it to carry on its work. The Provincial Treasurer, who has kept closely in touch with the company's operations, advises that the company has received from the J. D. McArthur Co. \$790,000 in connection with advances, or for work representing the unpaid accounts on the grading contract, and that a further sum of \$900,000 has been invested in the road which the railway company obtained through its bankers, all of which Mr. Mitchell is advised is guaranteed by the J. D. McArthur Co. and by Mr. McArthur personally.

"Under all the circumstances, I am of the opinion that the Board should allow the tariffs as filed. It must, however, be clearly understood that the Board's present action is not in any sense final. The conclusions are arrived at in advance of the development of traffic, and it well may be that the rates now in effect, and which the company's officials claim are merely sufficient for the actual operation of the road, may prove to be too high. The rates now allowed cannot be in anyway looked upon as possible of any general application. They are only allowed in view of the fact that the railway is a colonization road; has but little developed traffic and in effect bears to the transcontinental systems the relation of a branch line."

## Railway Rolling Stock Notes.

The National Transcontinental Ry. has ordered a wrecking crane of 100 tons capacity from F. H. Hopkins and Co.

Canadian Explosives, Ltd., has received 3 all wood box cars, 4,000 lbs. capacity, 36 ins. gauge, from Canadian Car and Foundry Co.

The Edmonton, Dunvegan & British Columbia Ry. has ordered 10 stock cars from National Steel Car Co.

The G.T.R. has received 50 steel underframe express refrigerator cars, 41 ft. 0-3-8 in. long, from Canadian Car and Foundry Co.

The Intercolonial Ry. has received 6 steel frame first class passenger cars, 74 ft. long, from Canadian Car and Foundry Co., and one switching locomotive from Canadian Locomotive Co.

The Canadian Locomotive Co. is reported to be making locomotive trucks for the Baldwin Locomotive Works, which has received some large orders for locomotives for some of the allied Governments.

The Grand Trunk Pacific Ry. has received two express refrigerator cars, nos. 6048 and 6049, from Canadian Car and Foundry Co.

The Canadian Northern Ry. has received 5 steel underframe second class passenger cars, 72½ ft. long, from Canadian Car and Foundry Co.

The Intercolonial Ry. has received 1 steam shovel, 2 all steel centre ballast unloaders, 2 Lidgetwood unloaders and 2 rail unloaders, from F. H. Hopkins & Co.; 6 first class cars from the Canadian Car and Foundry Co., and 156 all steel gondola dump cars, from the Eastern Car Co.

The G. T. Pacific Ry., as a result of experiments in the use of oil fuel on locomotives, has equipped its locomotives with the necessary apparatus to enable liquid fuel to be used throughout the Mountain Division. Canadian Railway and Marine World has already published details of the oil storage plants located at various points along the line in this connection.

J. D. McArthur and Co., Winnipeg, have ordered from the Canadian Car and Foundry Co., 50 all wood box cars for the Edmonton, Dunvegan and British Columbia Ry., and 50 for the Alberta and Great Waterways Ry., for delivery in October. Following are the principal particulars:—

Capacity .....	60,000 lbs.
Length over end sills .....	36ft. 9¾ins.
Width over side sills .....	9ft. 0¾ins.
Width inside .....	8ft 6ins.
Length inside .....	36ft.
Height top of rail to top of running board .....	12ft. 5½ins.
Side door opening .....	6ft.
Air brakes .....	Westinghouse KC 812
Bolsters and brake beams .....	Simplex

The Timiskaming and Northern Ontario Ry. has ordered 2 steel first class passenger cars and 2 steel baggage and express cars from the Pullman Co. The passenger cars will be 71 ft. long over the end sills, and the baggage cars 60 ft. long. They will be equipped for electric light, the power being generated from the axle, and in addition there will be a storage battery system for supplying light when the cars are not in motion. Heating will be by a combination vapor and pressure system of steam heat. The cars will have fish belly centre sills in the underframes with combined cast steel bolsters and platforms. The superstructures will be entirely of steel with an exterior finish of steel plates. Six wheel trucks with cast steel frames are to be used, and an anti-telescoping device, and the cars will, in all respects be duplicates of those ordered and placed in service in 1914, and described in Canadian Railway and Marine World for July, 1914, pg. 320.



# Freight Rates on Gravel for Road Making in Western Ontario.

Sir Henry L. Drayton, Chief Commissioner, Board of Railway Commissioners, gave the following judgment recently:

"The issue in this case concerns the movement of gravel to points in the counties of Lambton, Kent, Essex, and Middlesex, from Sarnia, Courtright, Rondeau, and Leamington, as well as movements from other water points. The question was first brought to the attention of the Board at the instance of J. D. Armstrong, M.P., who desired that low commodity rates should be extended by the companies to the movements of gravel, so as to enable the many municipalities affected to proceed with the work of general road improvement at a reasonable expense.

Gravel moves under the Freight Classification as 10th Class, but takes a special mileage rate of 2½c. a 100 lbs. for distances up to 10 miles; 3c. for distances over 10 up to 20 miles; 3½c. for distances over 20 up to 30 miles; 4c. for distances over 30 up to 40 miles; 4½c. for distances over 40 up to 50 miles; 5c. for distances over 50 up to 60 miles; 5½c. for distances over 60 up to 70 miles; 6c. for distances over 70 up to 80 miles; 6½c. for distances over 80 up to 90 miles. For distances over 100 miles the rate, of course, is scaled on; but, owing to the length of haul for the movement contemplated, it is unnecessary to consider the rates for greater distances. The Board required the companies to propose commodity rates as requested by Mr. Armstrong; and under the proposition that the companies then made gravel could move for distances up to 10 miles at 2c.; up to 20 miles, 2½c.; up to 30 miles, 2½c.; up to 40 miles, 2½c.; up to 50 miles, 3c.; up to 60 miles, 3½c.; up to 70 miles, 3½c.; up to 80 miles, 3½c.; and up to 90 miles, 4c. These rates were unsatisfactory to Mr. Armstrong and the different municipalities he represented; and he made application for rates based upon a gross return to the companies of 1c. per ton per mile.

"The application was heard by the Board in Petrolea. At the hearing, Mr. Armstrong, in developing the case, made the great public necessity of improving the highways in the interested counties abundantly clear, as well as the great corresponding benefit that good roads would mean, not only to the farmers in the first instance using them, but also to all kinds of industry, including the railways. The proposed rates were sought to be justified by comparison of rates on other commodities which the railways themselves had granted, and also on the results of railway operation expressed in the per ton mile rate, as shown by governmental statistics. Mr. Armstrong showed that the municipality could buy gravel from the Caldwell Stone & Gravel Co. delivered either at Point Edward or at Sarnia at 35c. a yard; for Courtright delivery, 40c.; for Wallaceburg delivery, 50c.; for Chatham delivery, 75c., and for Windsor delivery 90c. The Wallaceburg price would seem to be entirely out of line with the Windsor price; and, in view of the difference of the rates at both points, Courtright and Sarnia would seem to be the two shipping points that could be the more economically taken advantage of by the municipalities. Cheap gravel is also obtainable at Rondeau and at Leamington. The commodities referred to, and which Mr. Armstrong instanced as having low rates, were manure, coal, cement, and hay. Emphasis was laid on the fact that the rate in the case of all these different commodities on the movements given was less than 1c. a ton per mile. Mr. Armstrong also read into the record statistics of

revenue per ton for the year ended June, 1914, as follows:

Canada Southern Ry. ....	.625c
Intercolonial Ry. ....	.600c
Canadian Pacific Ry. ....	.753c
Grand Trunk Ry. ....	.687c
Grand Trunk Ry. (Canada Atlantic) ....	.598c
Grand Trunk Pacific Ry. ....	.641c
Canadian Northern Ry. (in Quebec) ....	1.227c
Canadian Northern Ry. (outside of Province of Quebec) ....	.749c

"The freight statistics are obtained as a result of calculations covering the total movements of all freight on the railways in question; and as gravel, rated as it is in the 10th Class, belongs to the group of commodities representing the lowest earnings, Mr. Armstrong's argument was that in any event it would not be unreasonable to apply to gravel rates yielding 1c. a ton per mile, that being a higher rate than that which the statistics show to be the average of the whole. Consideration of the usefulness of these ton mile earnings as a basis on which to predicate rates becomes necessary. Of all the companies whose statistics are given, probably the one doing at the present time the most unsatisfactory business is the Canadian Northern, in so far as its eastern lines are concerned. The system is new, is as yet uncompleted, and has not a worked-up or balanced traffic. Nevertheless, its earnings as expressed in return of tonnage per ton per mile are the greatest of those submitted. This apparent anomaly disappears when it is realized that before the ton per mile rate can be any index at all, the tonnage moved must be in the first instance of sufficient volume, and in the second instance the hauls must be of sufficient length to insure proper remuneration.

"The Canadian Pacific is often regarded as a line with a well-balanced traffic and obtaining good returns. Its return, however, of .753c. a ton per mile looks small as compared with the operations of the Canadian Northern in Quebec, resulting in a rate of 1.227c. On its face, the return to the Canadian Pacific is but little over 7-12ths of that enjoyed by the Canadian Northern in Quebec, while the fact is that the lower rate is the result of a really remunerative operation on the one hand against an undeveloped operation on the other. It is fundamental that the rate per ton per mile decreases as the length of the haul increases, with a result that the rate per ton per mile on a long haul of a high grade commodity carrying a high classification, might be lower than the rate per ton per mile on the commodity taking the lowest rating moving but for a short distance. This apparent anomaly is due, of course, to the fact that on a short haul the terminal expenses, which have to be added to the road haul, and which are comparatively constant, very largely increase the rate when expressed by miles. It has been shown, so far as the Canadian Pacific is concerned (and the results of other companies only differ in degree, depending on terminal operations and road haul on the one hand, and volume of traffic on the other), that 35% of the general transportation expenses are terminal expenses. The average revenue as returned to the Government of .753c. is, of necessity, based on the average haul, which has been shown to be 380 miles. Mr. Moule, the Statistician of the Canadian Pacific, in another case showed that while of the transportation expenses 35% were terminal expenses, that an estimate based on the locomotive mileage of the company showed that 15% of all its expenses would be assigned to terminals, with a result that approximately 28% of all the company's expenses were terminal costs, the

company's earnings per ton per mile being, as was shown, practically 7½ mills. These earnings, assigning them in the proper proportion as between terminal service and rail haul as fixed by the expenses, result to the company for road haul in 5.4 mills, and the balance, 2.10 mills, for terminal activity. Based on this 380 mile haul, the company averaged a return of \$2.85 for every ton of freight moved, and of this sum 80c. represents terminal operation. The result, therefore, is that on the characteristic average C.P.R. road haul rate as applied to hauls differing in length from 50 to 400 miles, a haul of 50 miles gives a ton per mile return, based on the terminal return of 80c. and the portion of the earnings attributable to road haul, of 2.14c.; for 100 miles, 1.3c.; for 200 miles, .9c.; for 300 miles, .8c.; for 400 miles, .74c. A rate per ton per mile of 1c. for a haul of only 50 miles in length would not cover the average terminal earning.

"As instancing the high rates on road material, Mr. Armstrong quoted the Grand Trunk rate from Guelph to Petrolea of 8c. per 100, or \$1.60 a ton, for 124 miles. This movement represents a return of 1.29c. a ton per mile. From St. Marys the rate is 6½c., or \$1.30 a ton, for a distance of 74 miles, equivalent to a rate of 1.756c. a ton per mile. As compared with the Canadian Pacific rate for 100-mile movements, 1.3c., including as it does all classes, this rate would seem to be high for a low grade commodity. As stated by Mr. Armstrong, there are specially low manure rates out of Toronto. These rates have been in the past justified on the ground of the necessity of getting rid of the material from the centre and bringing it to farming districts, which otherwise would not be properly cultivated, and the benefit to the railways of the return loads of fruit from orchard districts, which otherwise would not have been enjoyed. The railways have recently made application to have these rates raised, alleging that they are unremunerative. They are blanket commodity rates and are not at all of necessity related to the length of the haul. For example—the special commodity rates from Toronto to Stoney Creek, 46 miles, is 3¼c., and the rate is exactly the same to Beamsville, 60 miles. The rate to a greater distance of 83 miles, the maximum distance covered by the movement, that is to the Falls, is only 3c. As rates, manure rates are out of line and were never rates which appeared to have been properly scaled. It may be observed, though, that a rate of 3¼c. to Stoney Creek gives a per ton mile return of 1.41c., and the rate to Beamsville 1.09c. a ton per mile, yielding in each instance a higher rate than the rates would yield which are now asked for. I should also observe that those interested in the manure movement claim that the rate is really much higher, owing to the fact that the possible minimum loading of 30 tons cannot in most instances be obtained, owing to the condition in which the manure is received; also that the actual return to the company expressed in tons is much greater than the tariff shows.

"The bituminous coal rate relied on by Mr. Armstrong, from Detroit to Petrolea, of 65c. a ton for 76 miles, is a lower rate; but this rate again does not represent the sum of the railway activity or the railway earnings, as the coal in question does not originate at Detroit, and the rate relates back to the original movement from the mines. A like condition applies to the movement of bituminous coal from the



Niagara Frontier to Petrolea of \$1 a gross ton for 176 miles.

"There remains to be considered the hay rates quoted. Hay moves under 10th Class; and the 10th Class rate for a distance of over 15 miles and under 20 miles, is 5c. The rate is not advanced in the next 25 mile group; remaining at 5c. It is quite true that a better loading could be obtained of gravel than of hay, but it may be remarked that for a movement from Sarnia to Petrolea the special mileage rate applicable to gravel and on which gravel hitherto has moved, is only 3½c. A rate of 1c. a ton per mile, assuming the distance from Petrolea to Sarnia to be 20 miles, would require the hay rate which is quoted to be reduced from 5c. to 1c. per 100 lbs.

"The Board cannot order the companies to put in unremunerative rates, nor a rate so low as to be unfairly out of line with rates which are necessary to be maintained in order to permit the continuance of satisfactory operation of railways, due regard being had to proper consideration of the value of the commodities shipped and the service performed. It is, of course, manifest that the 80c. for terminal service, which is the result of the C.P.R. standard figure of 7½ mills, has no more to do with the actual terminal costs of a low grade commodity such as gravel, loaded and unloaded as it is by the shipper, than the rate enjoyed from an average haul of 380 miles has anything to do with the short hauls in question. It is, however, impossible for the Board to say that the rates proposed by the railways on gravel are excessive or unfair. The Board is bound to go this length before interfering with the rates which are in the first instance made by the railway companies. In its consideration of rates, the Board also cannot take into account matters of business policy and company administration. While, therefore, I felt that it was impossible for the Board to make any order, the Board has urged upon the companies the advisability of recognizing a public interest and the benefits which would result to the companies themselves from a proper system of good roads. The Ontario Government has also intervened, and is very desirous of obtaining extremely low rates, with a view to aiding the present campaign for good roads. The companies are insistent that they require more revenue, and that their rate returns as a whole are inadequate and insufficient; and, in the first instance, took the position that while they admitted the need of good roads, that, in view of their present necessities and of their present application for increase in freight rates, no concessions could possibly be made by them, as this would be construed as evidence that an increase in rates generally was not required. The railways have been assured that no such construction will be made by the Board. Sec. 341 of the act specifically provides—'Nothing in this act shall be construed to prevent—(a) the carriage, storage, or handling of traffic, free or at reduced rates, for the Dominion, or for any provincial or municipal Government. . . .'

"I am glad to say that the railways now state that, regarding the question in the light of public policy and the possibility of increased railway business as a result of the added prosperity, and with the understanding that the rates offered are not to be regarded as indicating sufficient rates for similar commercial service, they will carry in the territory in question gravel that the municipalities require at a flat blanket rate of 50c. a ton for any distance up to and including 50 miles; the rate to be a carload rate and cars to be loaded to their full stencilled carrying capacity; the gravel to be consigned to the clerk of the municipi-

ality and to be used for the purpose of road making; and the railway companies to be notified in advance of the number of carloads required, so that special instructions may be issued in each case. It is anticipated that 50 miles will be the maximum haul; but should municipalities at further distances require the gravel the rate will be scaled down in the usual manner for greater distances. It was represented that at this rate, in the more distant districts, there would be no difficulty in proceeding with road construction; and there is no reason why municipalities which are situated nearer the source of supply should experience any greater difficulty. I should point out that under the Freight Classification hay takes a 3c. rate for any distance not exceeding 5 miles. The rate which will now go into force on gravel is but 2½c. for distances not exceeding 50 miles. The hope is expressed that the action of the railways will be considered by the municipalities in the same way that it is being considered by the Board, and that the benefit to the public from road construction will more than repay the railways for the concessions they are making."

### Railway Finance, Meetings, Etc.

**Algoma Central and Hudson Bay Ry.**—The receivers of this company, acting on behalf of the bondholders' committee in London, England, have prepared and submitted a report on the property, and it is announced that a plan of financing the operation of the line is being considered.

**Buffalo and Fort Erie Ferry and Ry. Co.**—Tenders will be received by the Master in Ordinary, Toronto, to Oct. 4, for the purchase of the property and assets of this company, under proceedings in the action of Grobe vs. the company. The property is being offered as a whole, or in five parcels, viz:—Parcel 1, the steam railway including right of way, track, franchises, rolling stock and equipment, including 500 shares of International Ferry Co.'s stock, which operates the ferry steamboat Niagara Frontier between Buffalo, N. Y. and Fort Erie, Ont., and all lands, buildings, etc. of the company, except the land sold to the Canadian Niagara Power Co., and the lands and buildings offered for sale in parcels 2 and 3; parcel 4 consists of 20 shares in the Lake Shore Natural Gas Co., and parcel 5 of the furniture and office fixtures at Buffalo, N. Y.

**Canadian Northern Ry.**—An issue of \$11,500,000 two year collateral notes, dated Sept. 1, bearing interest at 5% per annum, has been sold to W. A. Read and Co., New York, and has been issued to the public at 98%. These notes are secured by the deposit of \$15,333,334 of Canadian Northern Ry. general mortgage 4% bonds due in 1934, principal and interest unconditionally guaranteed by the Dominion Government, and are convertible at par into bonds at 85 on, or before, maturity. At the issued price, the notes give about 5.75% on the investment.

**Glengarry and Stormont Ry.**—There has been deposited with the Secretary of State at Ottawa duplicate original of the agreement between the company and the C.P.R. for the lease by the latter of the G. and S. Ry., from St. Polycarpe, Que., to Cornwall, Ont.

**New York Central Rd.**—There have been filed with the Secretary of State at Ottawa several documents dated Feb. 1 and Feb. 2, being duplicate originals of agreements with the Guaranty Trust Co. of New York, supplemental to lease dated Feb. 15, June 8 and Nov. 23, 1910; Jan. 1 and April 2, 1912; Jan. 15 and Dec. 31, 1913; Mar. 30 and Nov.

18, 1914. The N.Y.C. Rd. is for the purpose of the agreement described as the successor by consolidation of the New York Central and Hudson River Rd., the Lake Shore and Michigan Southern Ry., the Michigan Central Rd., the Cleveland, Cincinnati, Chicago and St. Louis Rd., the Pittsburg and Lake Erie Rd., and the Toledo and Ohio Central Ry. The reason for the filing of these agreements at Ottawa is that the N.Y.C. Rd. owns the Ottawa and New York Ry. and the St. Lawrence and Adirondack Ry., and through the Michigan Central Rd. owns the Canada Southern Ry.

**St. Lawrence and Adirondack Ry.**—The shareholders will be asked at the annual meeting in Montreal, Sept. 1, to sanction the execution of a lease of the company's property and undertaking for 21 years to the New York Central Rd., to sanction by-laws changing the location of the head office from Montreal to Ottawa, and changing the date of the annual meeting from the first Wednesday to the third Tuesday of September.

**Temiscouata Ry.**—Gross earnings for June \$15,801; expenses \$14,532; net earnings \$1,269. The net earnings for June 1914 were \$7,513.

**Toronto, Hamilton and Buffalo Ry.**—A special meeting of shareholders has been called to Hamilton, Ont., for September 8, to authorize the issue of bonds up to \$10,000,000.

**White Pass and Yukon Route.**—Gross earnings from Jan. 1 to July 14, \$581,307 against \$623,287 for same period 1914.

### Grand Trunk Railway Betterments, Construction, Etc.

**Mimico Station.**—The Board of Railway Commissioners ordered, Aug. 4, that the station at Mimico, Ont., is to be removed to its original position on the south side of the tracks.

**London, Ont.**—It is said that an arrangement is nearly concluded for the building of a spur line by the G. T. R., across the C. P. R. to the sugar factory in the western limits of London, Ont.

**Port Huron Freight Sheds.**—We are officially advised that no decision has been reached as to the character of the freight sheds to be built at Port Huron, Mich., to replace those destroyed by fire July 6. (Aug., pg. 312.)

**Detroit United Ry.**—The draft contract for the purchase of the lines of the Detroit United Ry. in Detroit, by the City Council, has been approved of the Board of Street Railway Commissioners for Michigan, and was considered by the directors of the company Aug. 2. The agreement is to be finally ratified by a three-fifths majority of the ratepayers, and possession of the property is to be given at once. If possession is not given the city may within 60 days institute suit for specific performance, possession to be given within 30 days thereafter. The purchase price, which is to be paid out of earnings, is to be fixed by the circuit judge of Wayne County. The city will assume the mortgage debt of the company to the amount of the purchase price, and will pay off the balance, if any, of the mortgage indebtedness, pledging for this purpose two per cent. of the assessed value of the city. The first mortgage on the railway is due 1916, but the great bulk of the indebtedness is not due until 1932.

**Montreal Tramways Co.**—Press reports state that the company is preparing to issue a further \$1,000,000 of common stock at par to existing holders.



# Mainly About Railway People Throughout Canada.

George Bury, Vice President C.P.R., returned to Montreal August 1, after a tour of inspection of the company's western lines.

W. R. Butler, who has been Professor of Civil Engineering at the Royal Military College, Kingston, Ont., for the past eighteen years, has retired.

J. H. O'Dowd, who has been connected with the management of the C.P.R. Chateau Frontenac for twelve years, latterly as assistant manager, has resigned.

Lieut. R. Baker, who is with the 11th C. M.R. at Vernon B.C., and who is leaving shortly for the front, is a son of R. P. Baker, Paymaster, C.P.R., Vancouver, B.C.

D. R. McLellan, station agent, Halifax and Southwestern Ry., Shelburne, N. S., was killed there, Aug. 9, in removing a negro, who was taking a free ride, from the train.

S. Devlin, foreman, C. P. R. freight sheds, Guelph, Ont., died there suddenly from heart failure, Aug. 12. He had been stationed at Guelph for 30 years.

Hon. F. Cochrane, Minister of Railways and Canals, returned to Ottawa at the end of July after an extensive inspection tour of the Government railways in the Maritime Provinces.

S. C. Long, General Manager, Operating Department, Pennsylvania Rd., Philadelphia, Pa., visited Winnipeg, Aug. 8, on his return home from the Panama-Pacific Exposition at San Francisco.

G. H. Ham, of the C.P.R. head office staff, was entertained to dinner at Montreal, Aug. 23, by a number of old friends and associates, of the C.P.R., in honor of his 68th birthday.

Davidson & McRae, financial agents, who were connected with a number of enterprises closely allied to the Canadian Northern Ry., have dissolved partnership, A. D. McRae having withdrawn.

N. P. Dalziel, formerly of Mackenzie, Mann & Co.'s engineering staff Toronto, and latterly on their Comptroller's staff there, has resigned to undertake duties in the British War Office's service in Canada.

W. N. Riggs, baggage master, Prince Edward Island Ry., Charlottetown, P.E.I., died there July 21, after a short illness. He was born at Charlottetown, Dec. 11, 1847, and entered P.E.I.R. service Oct. 19, 1891.

T. C. Chalmers, station agent, G. T. Pacific Ry., Prince Rupert, B. C., has enlisted for active service in the transport section of the Canadian Expeditionary Force, and will leave for Europe shortly.

L. A. Roberge, who died at St. Lambert, Que., Aug. 12, aged 77, was interested in railway construction some years ago, and built the railway which used to run on the ice between Montreal and Longueuil.

W. A. Moore, local manager, Canada Railway News Co., Stratford, Ont., died there, Aug. 18, aged 54, after an illness lasting five weeks. He had occupied the position for 30 years, and was well known throughout the G.T.R. system.

E. H. Williams, Locomotive Foreman, Canadian Northern Ry., Brandon, Man., whose birthday occurred Aug. 26, was, through a typographical error, mentioned in our last issue as having been born in 1844, instead of 1884.

T. H. Roberts, who died at Walkerville, Ont., July 22, aged 71, was born in County Meath, Ireland, and came to Canada in 1868, when he entered G.T.R. service. He was subsequently appointed Mechanical

Superintendent of the Detroit Branch, G.T.R., which position he held on his retirement from active service in 1897.

W. R. Smith, Superintendent Great Northern Ry., Everett, Wash., spent a portion of his annual holiday in Ontario, and returned west Aug. 3. About eighteen years ago he was in C.P.R. service as a freight brakeman.

Mrs. C. P. Mullins, who died at Toronto, Aug. 22, was mother of W. E. Mullins, General Manager, Costa Rica Division, United Fruit Co., San Jose, and formerly of the G. T.R., and of T. Mullins, City Passenger Agent, C.P.R., Ottawa.

Capt. Jas. Turnbull, of the C. P. R. s. s. Empress of Britain, who was given the temporary rank of Commander, R. N. R., when the Admiralty took over the vessel at the commencement of the war, has been promoted to Commander on the active list, in charge of a patrol flotilla.



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L. C. Fritch,  
General Manager, Eastern Lines, and Assistant  
to the President, Canadian Northern Railway.

J. M. Cameron, who was recently appointed General Superintendent, Alberta Division, C.P.R., Calgary, removed his family there early in August from Vancouver, B.C., where he was formerly stationed as Assistant General Superintendent of the British Columbia Division.

H. Foster Chaffee, formerly Passenger Traffic Manager, Canada Steamship Lines, Limited, has been elected an honorary member of the American Association of Passenger Traffic Officers. H. G. Elliott, formerly General Passenger Agent, G.T.R., has been nominated for honorary membership in the association.

H. T. Meldrum, Secretary, Canadian Manufacturers Association, Montreal branch, has resigned and gone to London, Eng. It is said that he has been given an appointment in connection with purchasing war supplies for the Allies, which is being carried on under E. Fitzgerald, Assistant General Purchasing Agent, C.P.R., who is devoting his whole time to War Office service.

F. M. Spaidal, General Superintendent Quebec Grand Division, Canadian Northern Ry., Montreal, who has been off duty for some months on account of illness, during which he underwent an operation, and who has been at Lake Edward, Que., lately, has returned to Montreal, where he is seriously ill.

Thos. Henry, Passenger Traffic Manager, Canada Steamship Lines; J. F. Pierce, General Passenger Agent, Canada Steamship Lines; A. C. Shaw, General Passenger Agent, Western Lines, C.P.R., and W. H. Snell, General Passenger Agent, Eastern Lines, C.P.R., have been elected members of the American Association of Passenger Traffic Officers.

F. P. Brady, General Superintendent, National Transcontinental Ry., Quebec to Winnipeg, has bought a house, 308 Oxford St., Winnipeg, and has removed his family there from Moncton, N. B. His office for the present remains at Cochrane, Ont., but he also has an office in the Union Station, Winnipeg, and it is possible that his headquarters will be removed there.

Lieut.-Colonel A. E. Hodgins, who is organizing a body of men with railway construction and general mechanical experience in British Columbia, for active service in Europe, was, until his resignation in 1907, Division Engineer on Construction, National Transcontinental Ry., Kenora, Ont., and has latterly been connected with the British Columbia Public Works Department.

Sir William Van Horne, K.C.M.G., underwent a serious operation for an abdominal abscess at the Royal Victoria Hospital, Montreal, on Aug. 23, at 2.30 a.m., the operating surgeons being Doctors Armstrong and Hamilton, who issued a bulletin that he had stood the operation very well. Sir William was born in Will County, Illinois, Feb., 1843, and first came to Canada as General Manager, Canadian Pacific Ry. in Dec., 1881.

Henry S. Hawley, President of the Railroad Supply Co., Chicago, Ill., who died at Saunderson, R.I., towards the end of July, was born at Bridgeport, Conn., Aug. 12, 1851, was engaged for some years in railway contracting, and built a section of the G.T.R. from Valparaiso, Ind., to Thornton, Ill., and later purchased the Chicago and Southern Rd., which is now owned by the Chicago and Grand Trunk Ry.

Sir Percy Girouard, who, at the commencement of the war, resigned his position as one of the Managing Directors of Armstrong Whitworth & Co., in order to place his services at the disposal of the British Government in connection with the organization of the supply of munitions, has resumed his former position, the organization having been completed. His firm is the largest manufacturer of munitions in Great Britain.

William G. Connolly, whose appointment as City Passenger and Ticket Agent, G. T. Pacific Ry., Vancouver, B.C., was announced in our last issue, was born at McAdam Jct., N.B., May 28, 1889, and entered railway service July 1, 1906, stenographer and ticket clerk, G.T.R., Ottawa, Ont.; March 9, 1909, to June 1, 1910, ticket clerk, G.T.R., Montreal; June 1, 1910, to June 1, 1915, Assistant City Passenger and Ticket Agent, G.T. Pacific Ry., Vancouver, B.C.

Frederick Ernest Whelpley, who has been appointed Assistant Treasurer, Canadian Government Railways, Moncton, N.B., was born at St. John, N.B., Aug. 20, 1861, and entered transportation service May 1, 1893,



since when he has been, to Dec. 1, 1893, clerk, Hamburg-American Steamship Co., Montreal; Dec. 1, 1893 to May 1, 1903, outward freight clerk, Dock Department, some company, Hoboken, N.J.; May 1, 1903 to June 1, 1915, cashier, Canadian Government Railways, Moncton, N.B.

**Fred Carey**, who has been appointed Master Mechanic, Division 2, Intercolonial Ry., Campbellton, N.B., was born at Painsse Jct., N.B., Oct. 18, 1878, and entered I.C.R. service Sept. 1, 1893, since when he has been, to March 4, 1901, clerk in the Traffic Auditor's Office, Moncton, N.B.; March 4, 1901, to Oct. 7, 1910, locomotive fireman, Moncton, N.B.; Oct. 7, 1910, to May 1, 1912, Night Roundhouse Foreman, Moncton, N.B.; May 1, 1912, to May 19, 1915, locomotive driver, Moncton, N.B.; May 19 to July 19, 1915, Acting Master Mechanic, Division 3, Moncton, N.B.

**J. G. Thomson**, who has been appointed Commercial Agent, Chicago, Milwaukee & St. Paul Ry., Victoria, B.C., was born in Galt, Ont., and entered railway service with the C.P.R. at Chicago, Ill., where he remained fifteen years. He then moved to Winnipeg, representing the Minneapolis, St. Paul & Sault Ste. Marie Ry. there, and was later in West Shore Rd. service in New York. Eight years ago he entered Chicago, Milwaukee & St. Paul Ry. service, and for four years was travelling Passenger Agent at St. Paul, Minn., leaving there four years ago for Seattle, Wash., where he was engaged in advertising and publicity work for the company.

**A. D. Provand**, who died at Edinburgh, Scotland, recently, aged 76, will be remembered as the representative of the trustees of the bondholders of the Chignecto Marine Transport Ry. Co., who visited Ottawa frequently of recent years in the interests of the project. The object of the company was to build a railway for the transport of vessels across the isthmus dividing the Bay of Fundy from the Northumberland Strait in Nova Scotia. The Dominion Government in 1899 refused to grant any further extension of time for the carrying out of the project on which, it was claimed, some \$4,000,000 had been spent.

**William Cuthbertson**, General Assistant to the European Traffic Manager, G.T.R., Liverpool, England, died at his home July 12, and was buried at Birkenhead July 15, the funeral being attended by F. C. Salter, European Traffic Manager, G.T.R., London, and a representative from each of the various G.T.R. staffs throughout the United Kingdom. He was born at Caerla-verock, Scotland, March 8, 1851, and served on the Caledonian Ry. in Scotland, and the London and North Western Ry. at Liverpool. He entered the service of the Canadian Express Co. in Liverpool, May 19, 1873, and he was agent of that company when it was taken over by the G.T.R. He had held the position of General Assistant, G.T.R., for some time prior to his death.

**Charles Samuel Moss, A. M. Can. Soc. C. E.**, who has been appointed Resident Engineer, Maintenance of Way, C. P. R., Moose Jaw, Sask., was born at Toronto, Dec. 17, 1865, and entered C. P. R. service in 1891, since when he has been, to 1894, rodman on survey and construction in British Columbia; 1894 to 1897, instrument man in West Kootenay, B. C.; 1897 to 1898, Resident Engineer on construction, West Kootenay, B. C.; 1898 to 1899, instrument man, West Kootenay, B. C.; 1899 to 1900, instrument man, in Western Ontario; 1900 to 1903, Resident Engineer on construction, Vancouver, B. C.; 1903 to 1905, transit man, Maintenance of Way, Revelstoke, B. C.; 1905 to 1906, Assistant Engineer on Construction, Spence's

Bridge, B. C.; 1906 to 1912, Resident Engineer, Maintenance of Way, Nelson, B. C.; 1912 to May 1915, Assistant Engineer of Double Track, Kamloops, B. C.; May to July 1915, Assistant Engineer, Maintenance of Way, Nelson, B. C.

**Louis Charlton Fritch**, Assistant to the President, Canadian Northern Ry., Toronto, who has also been appointed General Manager, Eastern Lines, was born at Springfield, Ill., Aug. 11, 1869, and took a course in civil engineering at the University of Cincinnati, and subsequently a law course, and was admitted to the bar in Ohio. He entered railway service in 1884, as supervisor's assistant, Ohio and Mississippi Ry., and was, from Jan. 1, 1886 to Oct. 1892, Assistant Engineer, same road; Oct. 1892 to Nov. 1, 1893, Engineer Maintenance of Way, same road; and was also Chief Engineer in charge of construction, Cincinnati and Bedford Ry.; Nov. 1, 1893 to Sept. 1, 1899, Division Engineer, Baltimore and Ohio Southwestern Rd., which absorbed the Ohio and Mississippi Ry.; Sept. 1, 1899 to Nov. 1902, Superintendent, Mississippi Division, same road; Feb. 1904



**The Late J. W. Eber.**

to Mar. 1, 1905, engaged on special work, Illinois Central Rd., Chicago, Ill.; Mar. 1, 1905 to Nov. 1906, Assistant to General Manager, same road; Nov. 1906 to Mar. 1, 1909, Assistant to President, same road; Mar. 1 to Nov. 15, 1909, Consulting Engineer, same road; Nov. 15, 1909 to Mar. 31, 1914, Chief Engineer, Chicago Great Western Rd., Chicago, Ill., since which latter date he has been Assistant to the President, Canadian Northern Ry., Toronto. He is a member of the American Society of Civil Engineers, American Institute of Electrical Engineers, American Railway Engineering Association, American Association for the Advancement of Science, Western Society of Engineers and the Geographical Society. He was President of the American Railway Engineering Association in 1910, a director from 1905 to 1913, and a member of the rail committee in 1913; a member of the railway committee of the American Institute of Electrical Engineers from 1910 to 1913; chairman of the committee on engineering of the American Railway Association in 1913; a member of the committee on electrical working, of the American Railway Associa-

tion from 1910 to 1913, and a member of the committee on electricity of the American Railway Engineering Association from 1910 to 1913.

### Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those for 1913-14, from July 1, 1914:

	Gross Earnings	Expenses	Net Earnings	Increase or Decrease
July	\$1,594,300	\$1,163,800	\$430,500	x \$83,000
Aug.	1,367,700	1,123,000	244,700	x 163,000
Sept.	2,109,900	1,519,900	590,700	65,800
Oct.	1,895,300	1,332,100	563,200	x440,900
Nov.	1,670,200	1,123,100	547,100	x417,700
Dec.	1,329,100	908,000	423,100	200,900
Jan.	950,800	773,000	177,800	x175,100
Feb.	1,105,100	823,700	281,400	42,800
Mar.	1,379,000	956,000	423,000	62,600
Apr.	1,429,000	940,000	489,000	74,800
May	1,193,900	871,000	322,900	x158,700
June	1,201,300	866,000	335,300	x128,000
	\$17,225,600	\$12,396,900	\$4,828,700	\$1,523,000
Decr.	\$5,475,100	\$3,952,100	\$1,523,000	x Decrease.

Approximate earnings for July, \$1,156,190 against \$1,594,300 for July, 1914, and for two weeks ended Aug. 14, \$508,900 against \$673,900 for same period, 1914.

### Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1913-14, from July 1, 1914:

	Gross Earnings	Expenses	Net Earnings	Increase or Decrease
July	\$10,481,211.77	\$6,708,327.89	\$3,772,883.88	\$338,347.35
Aug.	8,917,764.38	6,554,606.65	3,373,157.70	597,981.54
Sept.	11,111,000.00	6,337,091.28	4,773,908.72	48,580.30
Oct.	9,282,928.49	5,361,600.13	3,921,328.36	2,281,529.43
Nov.	8,057,358.89	5,413,286.72	2,644,072.17	2,244,173.89
Dec.	7,443,962.43	5,244,438.62	2,199,523.81	2,027,297.90
Jan.	6,109,026.04	4,968,793.64	1,140,232.40	140,059.24
Feb.	7,778,808.40	4,756,663.87	3,022,144.53	507,438.16
Mar.	7,852,989.67	4,879,974.94	2,973,014.73	x126,224.14
Apr.	7,455,859.54	4,768,104.33	2,687,755.21	657,109.81
May	7,111,000.00	4,818,493.44	2,292,506.56	x520,069.52
June	7,512,033.93	4,834,002.95	2,678,030.98	x557,593.92

\$98,865,209.78 \$65,209,582.49 \$33,574,627.29 x\$8,851,300.39  
Dec. \$30,949,614.05 \$22,098,313.66 \$8,851,300.39  
xDecrease.

### Grand Trunk Railway Earnings, Etc.

The following figures show the earnings for the G.T.R. (including the Canada Atlantic Ry.), the G.T.W.R. and the D.G.H. & M.R. for July:

	1915	1914	Incr	Decr.
G.T.R.	\$22,122,925	\$24,243,868		\$2,120,943
G.T.W.R.	4,115,617	4,064,487	\$51,130	
D.G.H. & M.R.	1,458,091	1,399,721	58,370	

Totals ..... \$27,691,633 \$29,708,076 ..... 2,016,443  
Approximate earnings for two weeks ended Aug. 14, \$1,998,185, against \$2,175,533 for same period 1914.

### Grand Trunk Pacific Railway Earnings.

The approximate earnings of the Prairie Section, 916 miles, for July, were \$221,507 against \$343,987 for July, 1914. The earnings which have hitherto been published were for the Prairie Section and the Lake Superior Branch, but as the Lake Superior Branch is now being operated by Canadian Government Railways the earnings from its operation are not now quoted.

**Canadian Northern Ontario Ry. Contractors' Suit Settled.**—A settlement has been effected between Foley Bros., Patrick Welch and J. W. Stewart, trading as Foley, Welch and Stewart, against the C.N.O. Ry., and Mackenzie, Mann & Co., Ltd., arising out of the construction of the Ruel-Port Arthur section of the company's line. The terms of the settlement were not made known at the time the action was dismissed by consent.

**M. B. Douglas**, heretofore local manager, Great North Western Telegraph Co., North Bay, Ont., has been appointed local manager at St. Catharines, Ont., vice T. E. Dudley, resigned.

The Great North Western Telegraph Co. has not closed its office at Neepawa, Man., as announced in our last issue owing to incorrect advice.



## Canadian Northern Railway Construction, Betterments. Etc.

**Montreal-Ottawa-Port Arthur Line.**—We are officially advised that the section of the line between Ruel and Port Arthur, Ont., is receiving the finishing touches, and that it is expected to start a regular freight service over it early in September. This will enable the company to operate through freight traffic from Quebec, via Montreal, Ottawa, and Toronto, to Port Arthur, Winnipeg and all other points on the Canadian Northern Ry. The short line from Montreal to Hawkesbury, and the line from Ottawa to North Bay are not fully completed. These sections form part of the Montreal-Ottawa-Port Arthur line for the building of which the Dominion Parliament and the Ontario Legislature made special provisions.

A through freight reached Winnipeg from Toronto, July 29.

**Canadian Northern Ontario Ry.**—In connection with the company's application to the Board of Railway Commissioners for approval of a project for car ferry terminals at Cherry St., Toronto, we are officially advised that the plans for the same have not been completed. The company does not expect to be able to do anything further in this matter in the immediate future.

Orders have been given for building three frame constructed 100-ton capacity standard counter balanced bucket coaling plants at Rideau Jct., Capreol and Fitzbach, Ont. They will be similar to the plant erected at Trenton, Ont., which was described and illustrated in Canadian Railway and Marine World for June.

**Canadian Northern Ry.**—The new agreement between the Port Arthur, Ont., city council and the company, to replace the one disapproved of by the ratepayers at the municipal elections in January, was practically settled, Aug. 13. The subject matter of the agreement has to do with the transfer of Dock 5 to the city.

We are officially advised that the company is adding two miles of track in the yards at Port Arthur and Fort William, Ont.; and is putting in new sidings and extending the yards at various points on the line between Port Arthur and Winnipeg.

The line from Winnipeg to Grand Marais, Man., is, we are officially advised, being extended to Victoria Beach, 15 miles. The grading, bridging and track laying are to be completed this year. J. H. Higgins, Winnipeg, is the contractor.

Westerly from Winnipeg the company is ballasting about 120 miles of main line, and a considerable mileage on branch lines. About 80 miles of the main line west of Kam-sack, Sask., is being relaid with 80 lb. steel; considerable filling in is being done on trestle work, and two miles of bridge decks are being awarded west of Dauphin, Man.

The Thunderhill branch extends from Thunderhill Jct., Man., to Preeceville, Sask., 72 miles, and is being extended beyond that point. The grading on a line from Canora to connect with the Thunderhill branch at Sturgis, two miles east of Preeceville, 21 miles, was completed in 1914. The track laying and ballasting is, we are officially advised, to be completed this season.

The grading of a branch line from Wroxton, Sask., mileage 227 from Winnipeg, via the Neepawa-Russell-Ross Jct. line, into Yorkton, Sask., 26 miles, was completed in 1914, and we are officially advised that track will be laid and ballasting completed during this year.

The company has in operation a line from Delisle to Tichfield, Sask., which is projected easterly to Findlater on the Regina branch, and is in operation from Tichfield westerly

to Elrose, about 40 miles. The branch is projected to be extended towards Edmonton, a further distance of about 250 miles. On this grading was completed for 35 miles to Easton, on which, we are advised, tracklaying and ballasting will be completed this season. The Cowan Construction Co. is grading a further distance of 30 miles.

Track will also be laid this year, and ballasting done, we are advised, on the extension from Bienfail to Estevan, Sask., 9 miles, which was graded in 1914.

The projected line from Calgary to MacLeod, Alberta, is 103 miles long. About 17 miles of grading was completed in 1914, and we are officially advised that it is expected to complete the grading this year. It has not been decided whether any track will be laid this year. The grading is being done by the Northern Construction Co.

A line is under construction from Edmonton south easterly, and is already completed to Camrose, 47 miles. An additional 60 miles of grading has been completed to Battle River, but it has not been decided whether track will be laid this year.

On the line under construction from Oliver to St. Paul de Metis, Alberta, 110 miles, D. F. McArthur has the contract for grading 75 miles, which it is expected will be completed this year. The question of laying steel on this line this year has not been decided.

Automatic locomotive coaling plants of 200 tons capacity each are to be built at Kindersley, Sask., and Big Valley, Alta.

**Canadian Northern Pacific Ry.**—M. H. MacLeod, Chief Engineer and General Manager, returned to Winnipeg, Aug. 1, from a trip of inspection as far as the Albreda Summit, B. C. He is reported to have stated that ballasting and other finishing up work on the line from the Alberta-British Columbia boundary to the Summit was expected to be completed by Sept. 1.

F. C. Gamble, Chief Engineer, British Columbia Department of Railways, in a late report to the Government, states that the line is fully completed from the bridge at New Westminster to mileage 190; the portion between mileage 190 and 245 was expected to be fully ballasted and completed by the end of August. From Kamloops, mileage 245, the line had been completed for 125 miles northerly, with the exception of a second lift of ballast on 15 miles. The ballasting on the remainder of the line to mileage 413 was expected to be completed in September; thence to the British Columbia-Alberta boundary the line was completed. The buildings at the divisional and terminal points were all being gone on with, and the stations at intermediate points were being built. All the bridge structures had been completed, but after the line is opened three temporary bridges across the Thompson River, beyond mileage 316 will be replaced by permanent steel structures.

We are officially advised that division yards have been located at Port Mann, mileage 4; Boston Bar, mileage 118; Kamloops, mileage 244; Blue River, mileage 383; and Lucerne, mileage 494, all from New Westminster bridge. At Port Mann, there has been erected a 15-stall locomotive house, a 60 ft. turntable, large machine shop, two large boarding houses, an 80,000 gal. steel tank and other buildings. At Lucerne there are 10-stall locomotive house, and other buildings; at Boston Bar, Kamloops and Blue River it is contemplated to put up 5-stall locomotive houses and other necessary buildings, this year, the work on some of which is being done. All the division yards are being laid out with a view to future de-

velopments, sufficient trackage being laid for present purposes, but so as to permit of additions on previously arranged plans. Six station buildings, viz., at Langley, mileage 14.7; Matsqui, mileage 30.5; Sumas, mileage 35.9; Arnold, mileage 41.4; Rosedale, mileage 52.7 and Laidlaw, mileage 63.2, are in course of erection. The work is being done by the company's own staff.

**False Creek Terminals, Vancouver.**—The company's officials have made a protest to the Vancouver City Council against the city's plans for the seawall at False Creek flats. The question is whether the plans, which provide for slips, are in accordance with the terms of the agreement. (Aug., pg. 311.)

## Dominion Government Railway to Hudson Bay.

A weekly accommodation train is being operated on the Dominion Government Railway to Hudson Bay from Pas, Man., to the bridge at Armstrong Lake, 210 miles. The line has only been completely ballasted for the first 90 miles from Pas, and ballasting is in progress along the remaining 120 miles. Grading is fully completed to the Manitou Rapids on Nelson River, 15 miles from Armstrong Lake. Track is expected to be laid to the Nelson River during September. The substructure of the bridge is being put in, and it is expected that the bridge will be completed by Dec. 31. It will be of cantilever construction, the main span being 600 ft. Grading is practically finished for the next 50 miles to Kettle Rapids on the Nelson River, where another cantilever bridge will be erected next spring. Tracklaying will be started on this section next spring. Beyond the Kettle Rapids grading is in progress, and it is expected to have it fully completed to within 40 miles of Port Nelson by the end of the year.

At Port Nelson a short narrow gauge railway has been built southerly to bring in sand and gravel for use in making concrete and in filling the cribwork of the docks which are being built. W. E. Hawes is in charge of the dock construction work at Port Nelson. It is said that as soon as the wharves and docks are completed a grain elevator will be built. Three dredges are deepening the approaches to the harbor. (Aug., pg. 304.)

**Canadian Freight Association, Western Lines.**—At the thirteenth annual meeting at Winnipeg, Aug. 5, the following officers and standing committees were elected for the current year.—President, A. E. Rosevear, General Freight Agent, Grand Trunk Pacific Ry.; Vice President, W. C. Bowles, General Freight Agent, C. P. R.; Executive Committee, A. E. Rosevear, W. C. Bowles and G. Stephens; Inspection Committee, W. G. Manders, G. H. Smith, F. R. Porter and P. H. Burnham; Car Service Committee, H. J. Humphrey, J. P. Driscoll, T. P. White, W. B. Harris and G. P. Clarke; Weighing Committee, W. C. Bowles, O. C. Walker, G. Stephen, J. P. Driscoll, A. E. Rosevear and F. R. Porter; Classification Committee, W. B. Lanigan, G. Stephen, A. E. Rosevear, W. G. Manders, F. R. Porter, P. H. Burnham and W. C. Bowles. The Secretary-Treasurer is W. E. Campbell.

**Cascade Scenic Ry., Banff, Alberta.**—We are officially advised that the surveys for this projected railway are still in progress, and that, until all the data are obtained, it is impossible to decide finally on the details of construction. T. R. Deacon, Winnipeg, is interested in the project, and H. S. Johnson is in charge of the surveys. (April, pg. 137.)



# Canadian Railway AND Marine World

ESTABLISHED 1898

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## NOTICE TO ADVERTISERS.

ADVERTISING RATES furnished on applica-  
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TORONTO, CANADA, SEPTEMBER, 1915.

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## Canadian Pacific Railway Construction, Betterments, Etc.

**British Columbia Division.**—A press report states that a heavy rock slide covered a portion of the C. P. R. tracks near Golden, B. C., Aug. 3, and that as engineers reported there was no prospect of clearing the slide, a temporary track was built over the debris, and will, it is said, be made into a permanent one. (Aug., pg. 303.)

**Extension from Foremost East.**—On what is known as the Weyburn-Lethbridge branch from Weyburn, Sask., to Lethbridge, Alta., the line is in operation at the west end from Lethbridge to Stirling, 18.9 miles, and from Stirling east to Foremost, 49.2 miles, a total of 68.1 miles. In 1914 an extension was graded easterly from Foremost for 25 miles to Pakowki. As a result of Vice President Bury's inspection trip in the west recently and a subsequent trip made over the route of the extension by Vice President and General Manager Grant Hall, and Chief Engineer Sullivan, it has been decided to lay rails on the 25 mile extension at once. The work will be done by the company's own forces and is expected to be completed by Oct. 1.

## Great Northern Railway Lines in Canada.

**Kootenai Valley Ry.**—Some years ago the Great Northern Ry. built a line under this title from Bonners Ferry, Idaho, to the International boundary at Porthill, and subsequently extended the line into Canada under the title of the Bedlington and Nelson Ry. The line was laid out to cross the C. P. R. at Creston Jct., and touch it again near Sirdar, and then reach Kootenay Lake at Kuskanoek, B. C., from which point a steamboat service was to be operated to Nelson, making connection there with a branch of the Great Northern Ry., running from Marcus, Wash. The line as finally built and operated extended from the International Boundary to Creston, and from Sirdar Jct., to Kuskanoek, 15.20 miles, running rights being arranged for over the C. P. R. between Creston and Sirdar Jct., 8.7 miles. The line was operated with varying success from 1901 until about two years ago, when it was closed up. G. N. R. workmen are now reported to be dismantling the line and removing all usable material to Bonner's Ferry. The right of way mantling the line and removing all usable is reported to have been acquired by the British Columbia Government, for highway purposes.

**Vancouver Terminals.**—We are officially advised that the company's engineers are preparing plans for the passenger station and other terminal facilities at the projected terminals at False Creek, Vancouver. As soon as they have been prepared they will be submitted to the Board of Railway Commissioners for approval. (Aug., pg. 308.)

## Toronto Terminal Railway Company's Union Station.

An Ottawa press report, Aug. 10, stated that the basis of an arrangement had been reached between the Dominion Government and the Toronto Terminal Railway Co., under which the Government will bear the cost of the eastern wing of the new building. This wing will contain the Government offices and the section to be devoted to post office purposes. This is said to be the last obstacle, except the financial one, to the prosecution of the actual work of construction. The financial situation is reported to have been eased by an arrangement with the Bank of Montreal, by which advances up

to \$4,000,000 will be made on account of the work. The contract for the larger portion of the work was let last year to the P. Lyall Construction Co.

The viaduct work from near Bathurst St. to Cherry St., while not a part of the new station building project, hinges considerably on it. Whether the two works will be gone on with concurrently has apparently not been decided.

**North Toronto Station, Canadian Pacific Ry.** In the article on this station in Canadian Railway and Marine World for August, B. Ripley, M. Can. Soc. C. E., Engineer of Grade Separation, C. P. R. should have been mentioned as having charge of the track elevation work, which includes extensive baggage room and midway construction under the tracks. The contractors for this work were Wells & Gray Limited, Toronto.

**Ottawa Car Manufacturing Co., Ltd.**—W. M. Arnold, heretofore Assistant General Manager, has been appointed Manager, and Purchasing Agent, and W. K. Jeffrey, heretofore General Manager, has been appointed General Superintendent.

## ASSISTANT ENGINEERING EDITOR

wanted for Canadian Railway and Marine World during the absence of its Engineering Editor on active military service.

Must be competent to write on both mechanical and civil engineering, to do draughting and take photographs for illustration purposes.

State fully experience, age, references and pay expected to Managing Director, Canadian Railway and Marine World, 70 Bond Street, Toronto, Canada.



## Department of Railways and Canals

Car Ferry Terminal, Carleton Point,  
Prince Edward Island.

## NOTICE TO CONTRACTORS

STATION, WATER TANK, ENGINE HOUSE,  
ETC.

**SEALED TENDERS**, addressed to the undersigned and endorsed "Tender for Station, Water tank, etc., Carleton Point." will be received at this office until 12 o'clock noon on Wednesday, September 8th, 1915, for the construction of station, water tank, engine house, transfer platform, standpipe pit, ashpit and turntable foundations for the Carleton Point Car Ferry Terminal, Prince Edward Island.

Plans, specifications and form of contract may be seen at the offices of, and forms of tender obtained from, the Chief Engineer, Department of Railways and Canals, Ottawa, the Chief Engineer, Canadian Government Railways, Moncton, N.B., and the Engineer in charge, Car Ferry Terminals, Carleton Point, P.E.I.

An accepted bank cheque for the sum of \$1,500.00, made payable to the order of the Minister of Railways and Canals, must accompany each tender, which sum will be forfeited if the party tendering declines entering into contract for the work at the rates stated in the offer submitted.

The cheque thus sent in will be returned to the respective contractors whose tenders are not accepted.

The cheque of the successful tenderer will be held as security, or part security, for the due fulfilment of the contract to be entered into.

The lowest or any tender not necessarily accepted.

By order,  
J. W. PUGSLEY,  
Secretary.

Department of Railways and Canals,  
Ottawa, August 17th, 1915.

Newspapers inserting this advertisement without authority from the Department will not be paid for it.—84408. 6363



## Transportation Appointments Throughout Canada.

The information under this head, which is almost entirely gathered from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

**Canadian Government Railways.**—B. A. DUBROFF, heretofore chief clerk to the Comptroller and Treasurer, has been appointed Assistant to the Comptroller and not Assistant to the Comptroller and Treasurer, as announced in our last issue. Office, Moncton, N.B.

F. E. WHELPLEY, heretofore Cashier, has been appointed Assistant Treasurer, as reported in our last issue. It is not the present intention to appoint a successor to his former position. Office, Moncton, N.B.

See also Intercolonial Ry. and National Transcontinental Ry.

**Canadian Northern Ry.**—L. C. FRITCH has been appointed General Manager of all lines east of Port Arthur, Ont. He also continues in his duties as Assistant to President. Office, Toronto. The circular announcing this appointment was issued by D. B. Hanna, Third Vice President, and approved by Sir Wm. Mackenzie, President.

T. C. HUDSON, Division Master Mechanic, Quebec Grand Division, has had his jurisdiction extended over the Car Department, Quebec Grand Division. Office, Joliette, Que.

H. J. WHITE, heretofore General Foreman, Car Department, Quebec Grand Division, Joliette, Que., has been appointed Supervisor of Car Work on all lines east of Port Arthur, Ont. Office, Toronto.

J. H. McALPINE, heretofore Locomotive Foreman, Winnipeg, has been appointed Master Mechanic, with jurisdiction over territory between Parry Sound, Port Arthur and Cedar Lake, Ont. Office, Parry Sound, Ont.

Other appointments appear on another page, showing changes in Canadian Northern Ry., Ontario Division organization.

**Canadian Pacific Railway.**—T. G. CONNON, heretofore Chief Dispatcher and Car Accountant, British Columbia Electric Ry., Vancouver, B.C., has been appointed Agent, C.P.R., Windsor, Ont., vice F. T. Leversuch, resigned to enter London and Port Stanley Ry. service.

G. J. FOX, heretofore General Yardmaster, Swift Current, Sask., has been appointed General Yardmaster, Fort William, Ont., vice Donald McDonald, assigned to other duties.

S. J. BERRINGER, heretofore Yardmaster, Kenora, Ont., has been appointed yard foreman, Fort William, Ont.

DONALD McDONALD, heretofore General Yardmaster, Fort William, Ont., has been appointed yard foreman there.

J. J. McGUIRE, heretofore chief clerk, Royal Alexandra Hotel, Winnipeg, is reported to have been appointed Manager, vice W. Detlor, appointed Manager, Chateau Frontenac, Quebec.

C. S. MOSS, heretofore Engineer of Grade Revision, Kamloops, B.C., has been appointed Resident Engineer, District 2, Saskatchewan Division, vice J. V. McNab. Office, Moose Jaw.

J. H. BAKER, heretofore Roadmaster, Kenora, Ont., has been appointed Roadmaster at Medicine Hat, Alta., vice H. O. Whitney, who has left the service.

J. V. McNAB, heretofore Resident Engineer, Moose Jaw, Sask., has been appointed Roadmaster, Calgary Subdivision from Bassano to Calgary, Alta., and also the gleichen Subdivision.

H. SHALER has been appointed Locomotive Foreman, Crownsnest, B.C., vice J. A. Maddick, who has left the service.

Dr. J. A. MACDONALD has been appoint-

ed acting Medical Officer, Cascade Division, British Columbia Division, Vancouver, vice Dr. A. P. Proctor, who has been granted extended leave of absence, on his appointment as Surgeon Major with the British Columbia Field Hospital.

T. PENNEY, heretofore cashier, has been appointed Wharf Agent, Victoria, B.C., vice H. F. Bishop.

**Chicago Great Western Rd.**—C. A. FULLEN, General Agent, Winnipeg, Man., has had his jurisdiction extended to include the territory of the agency at Fargo, N.D.

**Chicago, Milwaukee and St. Paul Ry.**—J. G. THOMSON, heretofore engaged in the company's publicity work at Seattle, Wash., has been appointed Commercial Agent, Victoria, B.C., vice C. A. Solly.

**Grand Trunk Pacific Ry.**—The work heretofore separately performed by the mechanical and car departments has been consolidated at all points, except Transcona, the locomotive foreman being directly responsible, reporting to the superintendent. A district locomotive foreman has been assigned to each superintendent's territory, who will generally supervise the mechanical and car work, under the jurisdiction of the superintendent, to whom he will report. The time of all employees engaged in such work will be kept in the superintendent's office.

J. L. HODGSON, Master Car Builder, having resigned, C. E. BROOKS, acting Superintendent of Motive Power, will, until further advised, assume the duties of that position in addition to his own. Mr. Hodgson has apparently been transferred to the National Transcontinental Ry. Service.

W. J. STURGES, Storekeeper, Transcona, Man., has had his jurisdiction extended over the line to Prince Rupert, B.C., including branch lines. Requisitions for special material are sent to him at Transcona, and for standard material, hitherto sent to D. Robertson, who has enlisted for active service, are sent to C. Argyle, storeman, Edmonton, Alta.

A. A. TISDALE, formerly Superintendent, Lake Superior Division, Fort William, Ont., who has been on leave of absence, has been appointed Superintendent, Regina Division. Office, Regina, Sask.

J. F. MOFFATT, formerly Road Foreman of Locomotives, Wainwright, Alta., who was appointed General Locomotive Foreman over territory from Fort William, Ont., to Transcona, Man., recently, has resumed his former position, on the taking over of the line east of Winnipeg by the Canadian Government Railways.

A. ANDERSON, heretofore Roadmaster, Fort William, Ont., has been appointed Roadmaster, Edson, Alta.

A. KILPATRICK, heretofore Superintendent, Lake Superior Division, Fort William, Ont., has been appointed Superintendent at Smithers, B.C., vice J. H. Todd.

H. R. BULLEN, heretofore Soliciting Freight Agent, Regina, Sask., has been appointed City Passenger Agent, G.T.R. and G.T.P.R., San Francisco, Cal. Through an error in our advice from the company, an incorrect title was given in a recent issue.

The following station agents have been appointed,—Landis, Sask., C. H. LeGallais; Reford, Sask., T. Larner; Mawer, Sask., W. Norman; Irma, Alta., J. T. Kerr.

**Grand Trunk Ry.**—G. H. FRITH has been appointed acting Assistant Engineer, Belleville Division, Ontario Lines, vice G. A. Butler, resigned. Office, Belleville.

E. J. WEARING has been appointed acting General Assistant, G.T.R. and Canadian Express Co., Liverpool, England, vice W. Cuthbertson, deceased.

The following station agents have been appointed,—Britton, Ont., Mrs. J. Miles (passenger); Joe Lake, Ont., F. Folkard; Brockville, Ont., outside agency, J. W. Ridgeway.

**Intercolonial Ry.**—T. W. HENNESSY, heretofore Master Mechanic, Campbellton, N.B., has returned to his former position as locomotive driver, and is located at Truro, N.S.

F. CAREY, heretofore acting Master Mechanic, Division 3, Moncton, N.B., has been appointed Master Mechanic, Division 2, vice T. Hennessy. Office, Campbellton, N.B.

W. E. BARNES, formerly Master Mechanic, Division 2, and who was assigned to other duties in June, has resumed the position of Master Mechanic, Division 2, vice F. Carey, acting Master Mechanic, transferred to Campbellton, N.B. Office, Moncton, N.B.

E. MOORE is reported to have been appointed station agent, Moncton, N.B., vice C. Bovard, reported transferred to National Transcontinental Ry. service.

See also Canadian Government Railways.

**Lehigh Valley Rd.**—The appointment of G. H. LEE as General Passenger Agent reporting to the Traffic Manager, as announced in our last issue, does not affect the position of C. S. LEE, who continues as Passenger Traffic Manager.

**National Transcontinental Ry.**—The following is a complete list of officials between Quebec and Winnipeg, including the G.T. Pacific Ry. Lake Superior Branch, as far as we have been officially advised to date. The list includes a number of officials whose appointments have already been mentioned in Canadian Railway and Marine World. General officers,—F. P. BRADY, General Superintendent; L. G. ROBLIN, General Master Mechanic; W. A. COWAN, Division Engineer; A. H. WILLET, Assistant Division Engineer; A. J. LEGERE, General Car Inspector, all with offices at Cochrane, Ont.; District 1, Quebec to O'Brien, including O'Brien,—A. J. GORRIE, Superintendent; J. J. McMANUS, Assistant Superintendent; J. E. LePAGE, District Freight and Passenger Agent; A. BABIN, Resident Engineer, with offices at Quebec, Que.; P. J. HENSELWOOD, Bridge and Building Master; M. CASEY, Roadmaster; A. BEAUSEIGLE, acting Roadmaster, with offices at Parent, Que.; District 2, O'Brien to Superior Jct., not including yard,—W. B. WAY, Superintendent, Cochrane, Ont.; H. A. RYAN, Assistant Superintendent, Grant, Ont.; A. DEVINE, District Master Mechanic, Districts 1 and 2; H. A. LAIRD, District Freight and Passenger Agent; J. E. GIBAUD, Resident Engineer; W. J. CHISHOLM, Bridge and Building Master; W. P. HOUSTON, Roadmaster from mileage 1, O'Brien Subdivision, to mileage 109.5 Cochrane Subdivision, with offices at Cochrane, Ont.; J. WILSON, Roadmaster from mileage 109.5 Cochrane Subdivision, to mileage 63.4 Grant Subdivision, Grant, Ont.; J. E. LOGAN, Roadmaster from mileage 63.4 Grant Subdivision to mileage 131.8, Armstrong Subdivision, Armstrong, Ont.; District 3, Superior Jct. to Winnipeg, and Lake Superior Branch, G.T. Pacific Ry., R. S. RICHARDSON, Superintendent; A. MacGILLIVRAY, Resident Engineer, with offices at Fort William, Ont.; W. A. HILL, Chief Dispatcher, Graham, Ont.; R. A. POSTANS, Roadmaster, Fort William, Ont.; P. BERNARD, Roadmaster, Graham, Ont.; H. McCORMICK, Roadmaster, Transcona, Man.; J. BIRSE, District Master Mechanic; A. POSSNETT, Car Foreman; D. CAMPBELL, Bridge and Building Master, with offices at Fort William, Ont.; J. A. MITCHELL is General Foreman of Shops, Transcona, Man.; A. J. ROBERTS is Loco-



motive Foreman, Transcona, Man.; C. H. MOULTON, Locomotive Foreman, Redditt, Ont.; T. W. PALOS, Locomotive Foreman, Graham, Ont., and C. E. STEWART, Locomotive Foreman, Mission, Fort William, Ont.

The locomotive and car shops at Transcona, Man., built by the N.T.R. Commission and heretofore operated by the Grand Trunk Pacific Ry., have been taken over with the N.T.R. line east of Winnipeg for operation as part of the Canadian Government Railways, and all the officials of the shops appear to have been transferred to the N.T.R. service, except C. E. Brooks, who remains with the G.T.P.R. as acting Superintendent of Motive Power and also in charge of the G.T.P.R. Master Car Builders' work. J. L. Hodgson, Master Car Builder, G.T.P.R., appears to have been automatically transferred to the N.T.R. service, but no official announcement has yet been made, and the various foremen and employes in both the car and locomotive departments have been similarly transferred.

C. BOVARD, station agent, Intercolonial Ry., Moncton, N.B., is reported to have been appointed Assistant Superintendent, N.T.R., Edmundston, N.B.

C. R. MACKENZIE, heretofore General Superintendent's Assistant, Canadian Government Railways, Moncton, N.B., has been appointed chief clerk to General Superintendent. Office, Cochrane, Ont.

T. H. GILMOUR, K.C., has been appointed Solicitor and Claims Agent, Winnipeg to Armstrong, on main line, and Lake Superior branch, Lake Superior Jct. to Fort William. Office, 402 Lindsay Building, Winnipeg.

B. S. WOODS, frog shop foreman, Transcona, Man., has enlisted to active service in Europe. No appointment had been made to the position at the time of writing.

See also Canadian Government Railways.

**Thousand Islands Ry., Oshawa Ry.**—We are officially advised that no appointment has been made to fill the vacancy caused by the death of J. F. Chapman, Manager. H. W. COOPER, Secretary-Treasurer, is in full charge of the affairs of both companies for the present. Office, Gananoque, Ont.

**Toronto Suburban Ry.**—H. T. HAZEN, M.Can.Soc.C.E., District Engineer, Mackenzie, Mann & Co., Limited, and Consulting Engineer, Toronto Suburban Ry., has taken over the duties of Chief Engineer of the latter, vice E. T. Wilkie, A.M.Can.Soc.C.E.

**First through train on Canadian Northern Ry. to Pacific Coast.**—Sir William Mackenzie, President, C.N.R., left Toronto Aug. 22 by a special train over the company's main line via Sudbury, Port Arthur, Winnipeg, Edmonton and the Yellowhead Pass to New Westminster, the present Pacific Coast terminus of the line. He was accompanied from Toronto by Lady Mackenzie, Sir Glenholme Falconbridge, Chief Justice of the King's Bench of Ontario and Lady Falconbridge, D. B. Hanna, Third Vice President, C.N.R., A. J. Mitchell, Comptroller, Mackenzie, Mann & Co., and Assistant to Vice President, C.N.R., and John Aird, Assistant General Manager, Canadian Bank of Commerce. At Winnipeg the party was joined by Mrs. Hanna, M. H. MacLeod, General Manager, and the principal heads of C.N.R. departments there. It is said to be the intention to start a freight service between Toronto and Winnipeg during September. During Sir William's present trip to the coast a decision will probably be arrived at in regard to the operation of the line in British Columbia.

**The Pennsylvania Rd. System** carried approximately 180,000,000 passengers in the year ended June 30, and not one was killed in a train accident.

## Changes in Canadian Northern Railway's Ontario Division Organization.

Effective Sept. 1, the Ontario Division will be operated and organized as follows:— jurisdiction, Toronto District, reporting to Superintendent. Office, Rosedale, Toronto.

TORONTO DISTRICT—		Miles.
TORONTO TERMINALS .....	Toronto to East Don .....	5.6
TRENTON SUBDIVISION .....	East Don to Trenton .....	105.0
RIDEAU SUBDIVISION .....	Trenton to Ottawa .....	146.2
MAYNOOTH SUBDIVISION .....	Trenton to Wallace .....	117.6
	Ormsby Jct. to Coe Hill .....	7.2
PICTON SUBDIVISION .....	Trenton to Picton .....	124.8
IRONDALE SUBDIVISION .....	York River to Kinmount Jct. ....	30.6
TWEED SUBDIVISION .....	Yarker to Bannockburn .....	51.9
KINGSTON SUBDIVISION .....	Harrowsmith to Kingston .....	54.5
BROCKVILLE SUBDIVISION .....	Brockville to Westport .....	18.6
MUSKOKA SUBDIVISION .....	East Don to Parry Sound Jct. ....	44.4
ORILLIA SUBDIVISION .....	Udney to Orillia .....	143.6
		10.2
Total .....		735.4
LAKE SUPERIOR DISTRICT—		
SUDBURY SUBDIVISION .....	Parry Sound to Capreol .....	127.3
	Key Jct. to Key Harbor .....	6.2
	Sudbury Jct. to Sudbury .....	3.2
	Algoma Connection .....	2.4
	Garson Jct. to Garson .....	3.7
		145.4
NORTH BAY SUBDIVISION .....	Capreol to North Bay .....	83.0
RUEL SUBDIVISION .....	Capreol to Foleyette .....	148.3
	Sellwood Jct. to Sellwood .....	5.2
		153.5
OBA SUBDIVISION .....	Foleyette to Hornepayne .....	148.1
LONG LAKE SUBDIVISION .....	Hornepayne to Jellicoe .....	150.5
NIPIGON SUBDIVISION .....	Jellicoe to Port Arthur .....	148.0
		828.5

J. IRWIN is appointed Superintendent, Toronto District. Office, Rosedale, Toronto.

GEO. COLLINS is appointed Superintendent Branch Lines, with jurisdiction over Picton, Maynooth, Tweed, Irondale and Kingston subdivisions, reporting to Superintendent. Office, Trenton.

W. R. KELLY is appointed Assistant Superintendent with jurisdiction over Parry Sound, Orillia, Toronto Terminals, Trenton, Rideau and Brockville subdivisions. Office, Rosedale, Toronto.

W. C. MOORE is appointed Master Mechanic with jurisdiction over Toronto District, reporting to Superintendent. Office, Trenton.

G. P. MACLAREN is appointed Division Engineer with jurisdiction over Toronto District, reporting to Superintendent. Office, Rosedale, Toronto.

P. H. FOX is appointed Chief Dispatcher with jurisdiction over Toronto District. Office, Rosedale, Toronto.

W. J. CURLE is appointed Superintendent with jurisdiction over Lake Superior District (except Nipigon Subdivision). Office, Capreol.

J. E. NELSON is appointed Superintendent with jurisdiction over Nipigon Subdivision. Office, Port Arthur.

A. J. GAYFER is appointed Trainmaster with jurisdiction over Ruel, Oba, Long Lake and Nipigon Subdivisions. Office, Hornepayne.

A. J. GAYFER is also appointed Division Engineer with jurisdiction over Lake Superior District. Office, Hornepayne.

J. H. McALPINE is appointed Master Mechanic with jurisdiction over Lake Superior District, reporting to Superintendent. Office, Parry Sound.

J. E. CATHER is appointed Chief Dispatcher with jurisdiction over Lake Superior District (except Nipigon Subdivision). Office, Capreol.

T. J. BROWN is appointed Chief Dispatcher with jurisdiction over Nipigon Subdivision. Office, Port Arthur.

The Maintenance of Way Department organization will be as follows:

R. A. BALDWIN—Engineer Maintenance of Way, jurisdiction over Ontario Division, reporting to General Superintendent. Office, Toronto.

### TORONTO DISTRICT.

G. P. MACLAREN—Division Engineer,

E. MYERS—Supervisor of Track, jurisdiction, Toronto Terminals, Parry Sound and Trenton Subdivisions. Office, Rosedale, Toronto.

O. OGDEN—Supervisor of Track, jurisdiction, Rideau and Brockville Subdivisions. Office, Trenton.

O. KERR—Supervisor of Bridges and Buildings, jurisdiction, Parry Sound, Trenton, Rideau and Brockville Subdivisions. Office, Rosedale, Toronto.

J. McDONALD—Supervisor of Track, jurisdiction Maynooth, Picton, Irondale and Tweed Subdivisions. Office, Trenton.

J. D. EVANS—Supervisor of Bridges and Buildings, jurisdiction Maynooth, Picton, Irondale and Tweed Subdivisions. Office, Trenton.

### LAKE SUPERIOR DISTRICT.

A. J. GAYFER—Division Engineer, jurisdiction Lake Superior District, reporting to Superintendent. Office, Hornepayne.

W. M. JACKLIN—Supervisor of Roadway (including track, bridges and buildings), jurisdiction Nipigon and Long Lake Subdivisions. Office, Hornepayne.

E. AUDET—Supervisor of Roadways (including track, bridges and buildings), jurisdiction Ruel and Oba Subdivisions. Office, Capreol.

E. HAYSTEAD—Supervisor of Track, jurisdiction Sudbury and North Bay Subdivisions. Office, Capreol.

F. McKAY—Supervisor Bridges and Buildings, jurisdiction Sudbury and North Bay Subdivisions. Office, Capreol.

**G. T. R. Employes and the War.**—Employes of various divisions of the G.T.R. system are forming associations for the organization of systematic and permanent methods of contribution for war purposes. The G.T.R. Patriotic Association of Toronto has been organized with the following officers:—President, H. E. Whittemberger; Chairman, G. E. Pepall; Vice Chairman, W. S. Wilson; Secretary, J. A. Murphy, and Treasurer, J. Gray. The Barrie Division Railwaymen's Patriotic Association has also been formed, with P. J. Lynch as Chairman. Sub-committees will be arranged to establish a system of monthly collections until the end of the war, the amounts realized being expended on such articles from time to time as are decided to be desirable.



# Electric Railway Department

## Regulations for Winnipeg Electric Railway to Prevent Damage by Electrolysis.

In July, 1913, the Winnipeg City Council applied to the Manitoba Public Utilities Commissioner to compel the Winnipeg Electric Ry. Co. to establish measures of prevention of damage to underground cables and mains by electrolysis by electrical currents from the company's railway system. In June, 1914, the Greater Winnipeg Water District asked that consideration be given to the matter of electrolysis in so far as it might in any way affect the proposed pipe line for water supply and the distribution systems connected therewith. In the same month the Manitoba Government Telegraph Commission submitted a brief claiming that damage was being done to its underground cable system by electrolysis from stray currents of the Winnipeg Electric Ry. The railway company submitted a brief maintaining that every due precaution was being taken by it to mitigate all damage due to electrolysis. The Commissioner of Public Utilities appointed A. F. Gans to investigate the matter and after receipt of his recommendations made the following order to go into effect on Aug. 12:—

1. Every rail joint in the tracks of the electric railway system shall be so constructed and maintained that its resistance does not exceed the resistance of 8 ft. of continuous rail. Tests of the resistance of rail joints shall be made and recorded at least once every year, and when defective joints are found they shall be promptly repaired.

2. The 2 rails of every single track in the said system, and the 4 rails of every double track, shall be maintained adequately cross-bonded, and all special track work shall be spanned by copper wire jumpers of adequate current-carrying capacity.

3. All conductors which connect the tracks of the electric railways in the said system to the direct-current supply stations shall be insulated from the earth.

4. No metallic connections shall be permitted by the Company in its system between water, gas or other underground pipes and any part of the electric circuit of the electric railway.

5. The rails or other metallic conductors forming parts of current carrying electric circuits of the electric railway system, which are not insulated from earth, shall be designed, constructed, operated and maintained, so that the average potential difference during 10 consecutive minutes between any two points 1,000 ft. or less apart on said rails or other metallic conductors will not exceed 1 volt, and, further, so that the average potential difference during any 10 consecutive minutes between any two points more than 1,000 ft. apart on said rails or other metallic conductors within the area comprised by Winnipeg (including Elmwood) and St. Boniface, will not exceed 7 volts, (approximately the value adopted by the British Board of Trade.)

On account of the concentration and great importance of the underground structures in the neighborhood of the corner of Portage Ave. and Main St., Winnipeg, all feeders connecting to the tracks within a radius of 1,500 ft. from that corner shall be so proportioned as to maintain their connection points in the tracks at the same or slightly lower potential than the tracks at that corner during peak load. Owing to the proximity of the city water works, and of the important water main leading to the

said works, to substation 8 on Logan Ave., at McPhillips St., all feeders from the said station to the tracks shall be proportioned for substantially the same voltage drop during peak load. The track voltage requirements of this recommendation are to apply only to normal operating conditions on a business day, and not to occasional abnormal conditions in street railway traffic brought about for example by fires, storms, or holiday crowds. If at any time such difference of potential exceeds the above the company shall take immediate steps to bring it below such limit.

6. Potential wires insulated from earth shall be installed by the company in the district of every substation whereby contact may be made to the tracks at each point where a return feeder from this station connects to the tracks, at the feeding limits of each substation on the principal track lines where these terminate within the limits of Winnipeg (including Elmwood) and St. Boniface, and at the points where principal track lines cross the limits comprising Winnipeg (including Elmwood) and St. Boniface. These potential wires shall terminate in the substations in such a way that they can be conveniently connected to an indicating voltmeter and to a 24-hour recording voltmeter. One voltmeter of each type shall be provided for each direct-current supply station, so arranged that the potential difference between any two of the above described points in the track system can be measured or automatically recorded. A potential wire shall also be connected to a nearby water pipe by means of which the potential of the negative bus-bar referred to earth may be measured or recorded.

7. By means of the potential wires and voltmeters provided for in clause 6 above, the following measurements and records shall be obtained: The average potential difference between the tracks at a feeder connection point near the substation and each other feeder connection point, shall be determined from readings of the indicating voltmeter taken and recorded for a period of about 5 minutes during the peak load hour, once every month. From such test the point in the tracks which is at the lowest potential shall be determined. A 24 hour record of the potential difference between each point in the tracks at the feeding limits or at the city boundary and the tracks at the point of lowest potential shall then be determined once every month, on a normal business day. The potential difference between the negative bus-bar and a nearby city water pipe shall also be obtained at least once every day during peak load. If this potential difference should fall at any time to such a low value as to indicate grounding of the negative bus-bar, steps shall be taken by the said company to remove the ground connection.

8. All records of the tests described in the foregoing clauses, as well as the recording meters and meter charts shall be open to inspection from time to time by an authorized representative of the Commission. True copies of all records, as soon as completed, shall be forwarded by the company, to the Commission, as also recording meter charts, within 24 hours after the taking of such records and charts.

9. After the work required by clauses 1, 2, 3, 4, 5 and 6 of this order has been done, in every case all drainage connections from

underground lead cable sheaths to railway return circuit in Winnipeg, shall in every instance be opened and kept open, and tests of the potential of these cable sheaths referred to other structures and of current on the cable sheaths, shall (on 24 hours' written notice to the owner of such cable sheaths of the time and place at which the test is to be made), be made by the company to determine the electrolysis condition of such cable sheaths. If, in such case, cable sheaths shall be found to require additional protection, a limited amount of electrical drainage may be applied by the company upon application to this Commission on notice to the owner of the cable sheath, and subject to such directions as may be then given by this Commission. Such drainage connections must be arranged to apply equally to all of the underground cable systems, so as to avoid setting up serious potential differences between the lead sheaths of the different cable systems. They must also be so arranged and maintained as to drain off the least current consistent with the complete protection of the cables and without setting up dangerous voltages to other underground structures. A suitable fuse, a knife switch, and an ammeter, shall be installed in each drainage connection, and daily readings of the current drained from the cables during the peak load hour shall be obtained and recorded. The drainage connection must be opened whenever the station is not in operation.

10. In future constructions and reconstructions of direct current electric railways employing the running tracks as part of the electric circuit, such track construction shall be employed, in addition to that already required by the previous clauses, as will give the greatest practicable resistance between tracks and earth for the existing conditions. Without limiting the foregoing this must be done particularly where such railways cross or run close to underground pipe or cable lines.

Note.—Clauses 1, 2, 3 and 4 of the foregoing are to apply to the railway lines of the company, as far as these lines are supplied with direct current from the substations located within or near the limits of Winnipeg. Clauses 5, 6 and 7, however, are not made to apply to the lines extending beyond the limits of Winnipeg and St. Boniface, because these lines are generally located on country roads where the tracks can be substantially insulated from ground, and where there are at present no underground structures which could be affected by electrolysis.

11. In future constructions or reconstructions by the company (within the Province of Manitoba, but excepting the cities of Winnipeg and St. Boniface, which are covered by the previous clauses) of direct current electric railways employing the running tracks as part of the electric circuit, clauses 1, 2, 3 and 4 shall be complied with by the company, and, in addition, such track construction shall be employed by the company as will give the greatest practicable resistance between tracks and earth in the existing conditions. If such electric railways operate within limits where there is valuable underground property which may be endangered by electrolysis, the track voltage limitations, the potential wires for measuring these voltages, and the periodic



tests of these voltages, as required in clauses 6, 7 and 8 hereof, shall be complied with within the limits affected.

12. The company shall prosecute the herein specified work and equipment to completion by Oct. 31, 1916. Immediate action shall be taken by the company to prosecute the work and monthly progress reports shall be delivered by the company to the Commission. The work accomplished from month to month, after this order goes into effect, must be such as to show that all diligence is being wrought to execute this order. In the event of want of diligence from month to month, as aforesaid, by the company in carrying out the work hereby ordered the city may apply to this Commission for the imposition of penalty for delay or for such other order as may appear proper. The company shall, in the construction, maintenance and operation of its electric railway system, continuously observe and perform all the directions contained in this order.

13. In the design and construction of the insulated return feeder system as required under this order, the company shall employ a safety factor of 1.5, that is to say in determining the amount of copper required in the return feeders to reduce the voltage drop to the limit prescribed under clause 5, which will be estimated theoretically under the normal peak load conditions, such amount shall be increased by 50% of itself to insure the fulfilment of the requirements under varying operating conditions.

14. In the installation of insulated return feeders and potential wires along Portage Ave. from Victoria St. to the St. James substation, and on Main St. from Graham Ave. to Sutherland Ave., all wires and cables shall be placed underground in conduits of the company laid in streets as either already existing, or (as to Main St.) to be constructed according to the plans heretofore approved for that purpose by the City Council.

15. In the event of the herein specified work and equipment not being completed by midnight of Oct. 31, 1916, the company shall pay a penalty of \$50 for each and every day that the default continues after the specified time.

### The Electric Railway Accident at Queenston.

The coroner's jury which enquired into the accident on the Niagara Falls Park & River Ry. at Queenston, Ont., July 7, in which a number of persons were killed and a larger number injured, returned the following verdict:—"We find that H. J. Partridge and others came to their death on July 7 from excessive speed causing car 685 to derail and overturn. Said car was driven by Motorman Sidney Boyt, and in charge of Conductor George Caswell. Excessive speed was caused by the ineffective working of the brakes on a wet and greasy rail. We find also that the motorman did all in his power that was possible for him to do with the equipment at hand to control the car. We still further find a very slack observance of rules of the company by the officers and operators regarding equipment, which includes sand and loading."

On Aug. 4 R. R. Dickson, Vice President and General Manager, International Ry., which controls the Niagara Falls Park and River Ry., was arrested on a charge of criminal negligence in connection with the accident. The magistrate admitted him to bail of \$20,000 to appear at St. Catharines, Ont., Sept. 1.

## The Jitney Situation in Canada.

There is apparent all over Canada a general diminution of the number of cars engaged in the jitney business. In Montreal and Saskatoon, Sask., the business has practically ceased, while in Toronto, Winnipeg and other places the number of cars running has been considerably reduced. In a few of the smaller cities and towns of Ontario, in particular, a beginning has been made with a jitney service, but in nearly every case it is being run to give connection with outside points, and not as a continuous service on schedule routes within the town.

The Toronto Jitney Association, which was incorporated May 12, has decided to go out of business. In fact the business practically left the company, the owners and drivers of jitneys claiming that they could do better for themselves, than with the association, which charged members \$2.50 a week, in return for which certain services were given, in connection with the routing of cars, making up schedules, etc. Another feature claimed for the association was that through it the members would be able to buy supplies and repairs at reduced prices. The members say the association failed to live up to this part of its promise, but, however this may be, it was not the chief cause of the failure of the association, which can be laid at the door of the non-association jitney owners and drivers, who cut in on routes when travel was brisk, made their routes long or short just as it suited them, and never bothered about schedules. The result was that the owners of the cars decided to save the \$2.50 a week. The bailiffs were put in possession of the association's office for rent, July 27, and the business ceased. However, the jitneys have not yet disappeared from Toronto, although they are very much fewer in numbers. The wet weather of the past month or so has also hit the business severely. It was expected there would be a considerable revival of the business during the Toronto Exhibition, which opened Aug. 28.

The regulation of the jitney business in Hamilton, Ont., comes under the bylaw licensing and regulating licensed omnibuses, which is dated June 24. The term licensed omnibus in the bylaw means "every licensed vehicle used in what is known as the jitney service, and used or intended to be used for the public conveyance of passengers who are carried without any pre-arrangement in vehicles other than those used as cabs" within the meaning of the bylaw of Oct. 14, 1910. Licenses under the bylaw of 1910 shall not entitle the owner of the vehicle to operate it as a jitney. No license will be given a car carrying less than five adults; the license fee payable being \$2 a seat a year, exclusive of the driver's seat; and the vehicle cannot be used otherwise than as a jitney. The regulations specify the form of application for the license, the care of the car, the conduct of the driver (who must not, under any circumstances, be a female) while in charge of the car, etc. The licenses may be revoked at any time by the Board of Police Commissioners without giving any reason therefor, and breaches of the bylaw are punishable by a penalty of not less than \$1 nor more than \$20.

A bylaw regulating jitney traffic in Berlin, Ont., has been passed, and a press dispatch Aug. 8, said:—"Berlin's sole jitney owner was fined \$1 for operating a jitney service contrary to the provisions of the bylaw." It was stated the decision would be appealed as the jitney was not being operated on a fixed route but was used to convey passengers to towns outside Berlin.

A jitney service is being operated in

Owen Sound, Ont., three ordinary five passenger cars being operated by A. J. Frost. He proposes to put on a regular jitney automobile if a satisfactory model can be bought. Owen Sound has no electric railways.

A jitney bylaw has been put in operation in the St. James district near Winnipeg, Man., with a license fee of \$5 a year. Eight licenses were at once taken out, but some 50 car owners were subsequently warned that they must take out licenses before operating in the district. They picked up passengers in the area, but did not collect any fares until the car got out of the Assiniboia limits.

As soon as the jitney bylaw became effective in Saskatoon, Sask., the three jitney cars operating in the city stopped running. The only jitney running is that from Sutherland into Saskatoon, and it is considered doubtful whether the bylaw can be put in operation against it, so long as it only carries back to Sutherland the passengers it takes into Saskatoon.

The bylaw passed by the Edmonton, Alberta, City Council, to regulate the jitney traffic came into effect Aug. 1. The jitney owners are forming an association for the protection of their interests.

The New Westminster, B.C., City Council has passed a bylaw regulating jitney traffic. There are very few jitneys operating in the city limits, the principal traffic being interurban with Vancouver. One of the regulations provides that no Asiatic or negro may enter a car in which there are already white passengers. Drivers must not solicit passengers either directly or indirectly on the public streets. The council may from time to time designate routes to be used and may say where cars shall be allowed to stand. Every owner of a car for hire shall put up a bond, but the amount of the bond has not yet been fixed.

A bylaw for the regulation of the jitney traffic came up for consideration by the Victoria, B.C., City Council, Aug. 8, being very similar to the one in force in Vancouver. Consideration of the bylaw was postponed in order that a committee of council and the jitney association could meet and agree to details, so that it could be passed at the next meeting of the council as an unopposed measure.

### Edmonton Radial Railway Operating Results.

Following is a comparative statement for six months ended June 30, 1915 and 1914,—

	1915.	1914.
Earnings .....	\$267,097.40	\$324,610.81
Expenses—		
Maintenance .....	26,013.57	45,346.82
Operating .....	125,487.28	164,920.63
Power .....	48,922.67	75,282.40
Total expense, exclusive of fixed charges .....	200,423.52	285,549.85
Capital charges .....	114,423.36	113,157.00
Depreciation .....	27,972.92	50,981.23
Gross expense .....	342,819.80	449,688.13
Deficit .....	75,722.50	125,077.32
Average expense per car mile .....	35.5c.	42c.
Power per car mile .....	3.2kw.	3.5kw.
Passengers carried .....	5,486,472	7,537,760

**Detroit United Ry.** The stockholders approved the proposed purchase contract with the city, Aug. 2. About 80% of the stock was voted. The contract is now before the City Council, and after a lapse of 30 days, the ratepayers will vote on the proposal.

**The production of briquetted fuel in the United States in 1914** amounted to 250,635 short tons valued at \$1,154,678, an increase of 37.82% over the production of 1913.



## Answers to Questions on Electric Railway Topics.

Following are questions submitted to the American Electric Railway Association's question box, with replies thereto by Canadian electric railway officials:

**Car Operation.** What effect does the variation of the centre of gravity have on the riding of a car?

H. M. Lloyd, Equipment Engineer, British Columbia Electric Ry., Vancouver, B.C.—Raising the centre of gravity has an effect similar to lengthening the pendulum, and would tend to lessen the violence of oscillation due to uneven track, and of the side shock resulting from "nosing" at high speeds; consequently a high centre of gravity tends to easier riding.

**Shop Cleaning.** What disposition do member companies make of shop cleaning, such as paper, waste and shop sweepings?

H. M. Lloyd, Equipment Engineer, British Columbia Electric Ry., Vancouver, B. C.—All sweepings which can be burned we consume in the sand-drying stove. Machine shop sweepings, such as steel turnings, etc., we have been using to fill in under a wharf close to the shop.

**Car Headlight Location.** Where is the best place to locate the headlight on an interurban car, on the dash, or on the hood?

H. M. Lloyd, Equipment Engineer, British Columbia Electric Ry., Vancouver, B. C.—Placing the headlight on the hood has the advantage in foggy or rainy weather that the beam is above the driver's line of vision, but in the case of an arc lamp, it is not so accessible as on the dash, and dangerous for the men who have to handle the lamp. After one or two men had fallen off the end of the car, while reaching up with the lamp, we changed the location. Our cars are all multiple unit, with end doors, and we now hang the lamp on the door, about 3 ft. from the floor, or a little over 7 ft. above the track. The ground connection is made through the door hinges, and the connecting receptacle is on the door post, about 6½ ft. up. In this position the lamp can be handled with safety and is readily accessible for inspection, as the door can be swung inward with the lamp lighted. The illumination of the track in this position is quite satisfactory.

**Oil Consumption.** How often do you oil journals, and what is the consumption per 1,000 car miles on a 40 ton car with 5 by 9 in. journals?

D. E. Blair, Superintendent of Rolling Stock, Montreal Tramways Co., Montreal.—Our experience is that if a car journal box is reasonably dust proof and water proof and is carefully packed, it only requires attention twice a year. We find that a general overhaul of journal boxes in the spring and autumn in addition to the repacking of journal boxes when wheels are changed, takes ample care of the situation. The above refers to cars in city service.

## Calgary Municipal Railway Earnings.

Following is a comparative statement of the revenue, expenditures, etc., for June, 1915, and June, 1914:

	1915.	1914.
Revenue .....	\$45,098 00	\$63,976 25
Expenditure .....	27,723 44	39,815 76
Balance .....	17,374 56	24,160 49
Capital charges .....	45,098 00	63,976 25
Miles operated .....	212,062	266,536
Passengers carried .....	1,066,356	1,547,235
Revenue per car mile .....	21.266c	24.033c
Expenses per car mile .....	13.073c	14.938c
Power per car mile .....	2.960c	3.337c
Expenses to gross revenue .....	61.5%	62.2%

## Interurban Cars for the Toronto Suburban Railway.

Some details were given in Canadian Railway and Marine World for July, pg. 273, of the 6 interurban cars which the Toronto Suburban Ry. has ordered for service on its Toronto-Guelph line, now under construction. They will be of the centre entrance type with the under frames and sides entirely of steel. The entrance and exit doors will be under the control of the conductor, who will stand in the centre of the car, and there will be no steps protruding beyond the side of the car. Three of the cars will have two compartments, the forward one being for smokers; and three cars will have three compartments, half of the smoking compartment being utilized as a baggage compartment. The cars will be 59 ft. long over all, mounted on two four wheel trucks with 34 in. rolled steel wheels at 6½ centres. There will be four 110 h.p. motors for each car, and also air brake equipment. The couplers will be automatic, with air couplers combined.

The seats in the main passenger section will be upholstered in green plush, and in the smoking compartment in leather. Lavatory accommodation will be provided off the main compartment. The main compartment will be 25 ft. long, the entrance vestibule 6 ft., and the smoking compartment 21 ft., which in the cars which have the baggage compartment, will be reduced to 11 ft. The weight of each car will not exceed 850 lbs. per seated passenger. The cars are being built by the Preston Car and Coach Co.

## Toronto and York Radial Railway Operation on Yonge Street, Toronto.

The Ontario Railway and Municipal Board has approved of the company's plans regarding a switch, or deviation from Yonge St., Toronto, westerly into the company's property, south of Farnham Ave., subject to any modifications that may appear proper to be made after hearing the City's objections on engineering grounds. The City objected to the Board's jurisdiction to entertain the application, which, it claimed, raised the question of the company's right to lay the proposed tracks on Yonge St., as, if the company had that right, the Board might approve its plans and authorize the lawful execution of the work. The determination of this question, it is claimed, necessitates a consideration of the statutory powers of the company and its rights under various statutes and agreements.

In delivering judgment, D. M. McIntyre, Chairman, after going into the details of the acts of incorporation of the Metropolitan Ry. Co. and the Toronto and York Radial Ry. Co., and the various agreements concerned, summed up the position as follows,—

"The company under various statutes and agreements has constructed and is lawfully operating its railway on the portion of Yonge St. in question; the company owns a parcel of land abutting on that portion of Yonge St. upon which admittedly it has the right to erect terminal buildings and tracks; it seeks authority to connect its tracks so lawfully being in Yonge St. with its terminal proposed to be erected on its abutting parcel of land so that the purposes of its undertaking may be conveniently and effectually carried out, but the city objects on the ground that the company has no right in law, by statute or agreement to make the connection. Surely, after all these enabling acts and solemn agreements designed to bring into being a legal entity clothed with powers to discharge specific functions in the

transportation of persons and things, and after large expenditures made on the faith of them, the company might well complain of the denial of a right so vital. Indeed, upon a consideration of the facts and in view of the inconvenience and embarrassments which must be suffered by the public using Yonge street at the point in question by reason of its virtual adoption as a terminal by the company, the Board would rather have anticipated an application by the City to compel the company to provide a suitable terminal on its own property connected up with its tracks in the customary way."

The city has decided to appeal the case to the Imperial Privy Council.

## The Street Railway Situation in St. Thomas, Ont.

In connection with proposals that the London and Lake Erie Ry. and Transportation Co. take over the municipally operated street railway in St. Thomas, and run it in connection with its own line, the St. Thomas Journal comments as follows: "Municipal ownership and operation so far as the St. Thomas street railway system is concerned has been a miserable failure. Countless aldermen and paid officials have been in charge of the local road and failed to make good. Perhaps the fault was not their own but the fact remains that the deficit incurred by the operation of the line is increasing by leaps and bounds and the patience of the people has been exhausted. The London and Lake Erie Ry. and Transportation Co. is said to be desirous of taking over the St. Thomas system with the idea of operating it in conjunction with its own line from London to Port Stanley. If satisfactory terms can be arranged then there seems no reason why the city should not hand over the line to that company, and furthermore the local authorities should not be too particular in coming to terms. The ratepayers of St. Thomas are thousands of dollars out of pocket every year by reason of the street railway deficits. Almost any kind of a bargain with the company to operate the road should be satisfactory. Let the burden be taken off the shoulders of the taxpayers. The London & Lake Erie people in proposing to take over the road apparently see where it might be operated to advantage in connection with their own system, and, no doubt, they have considered the situation from all its aspects before making overtures toward securing the use of the lines and rolling stock. Operated by the company, we would naturally expect the local system to be of secondary importance in the company's estimation and run as such. What else may we ask? The whole province knows the deficit history of the St. Thomas railway. It is useless to deny that the system is a white elephant. Let us turn it over to some one else with the best terms that can be secured under the circumstances."

## Equipment for Toronto Civic Railway.

The Toronto City Council accepted tenders recently for equipment for the St. Clair Ave. car line as follows:

McGuire-Cummings Manufacturing Co., 1 single-truck sweeper body, \$1,695; Canadian Westinghouse Co., Ltd., 4 no. 533 commutation poles, \$593 each; 1 set of resistance for one motor, \$36; 1 lighting arrester, \$4; 2 circuit breakers, \$23; Canadian General Electric Co., Ltd., 2 K-10 controllers, \$126.75 each; 1 R-28 controller, \$89.45; 1 set of resistance for 2-motor car equipment, \$32; 300 ft. no. 6 B. & S. car wiring, double braid covered copper cable, 04.825 cts. per ft.; 150 ft. no. 14 B. & S. double braid rubber covered copper cable, 01.326 cts. per ft.



## Montreal Tramways Company's Annual Report.

Following is the report for the year ended June 30, submitted at the annual meeting, August 3:

Gross earnings .....	\$6,525,231 67
Operating expenses .....	3,713,996 44
Net earnings .....	\$2,811,235 23
From which deduct:	
City percentage on earnings .....	\$414,149 31
Interest bonds and loans .....	825,415 12
Interest debenture stock .....	800,000 00
Taxes .....	92,800 00
	2,132,364 43
Net income .....	\$ 678,870 80
Dividends .....	278,880 00
Surplus .....	\$ 399,990 80
Less:	
Transferred to contingent renewal account .....	275,000 00
Transferred to general surplus ...	\$ 124,990 80

The gross earnings have decreased during the year \$617,572.52, or 8.65 per cent., the operating expenses \$492,118.13, or 11.70 per cent., and the net earnings \$125,454.39, or 4.27 per cent. The ratio of operating expenses to earnings is 56.92 per cent., compared with 58.89 per cent. last year. \$212,731.80 has been charged to contingent renewal account during the year, representing expenditures made for special renewals. \$666,429.90 has been expended in the maintenance of the properties, plant and equipment, and charged to operating expenses. This, together with \$212,731.80 charged to renewal account, makes a total expenditure during the year on the upkeep of the properties of \$879,161.70. During the year there has been expended on capital account \$621,125.05. The company under its trust indenture is entitled to issue bonds on its capital expenditures equal to 75 per cent. thereof, and under this provision it is now entitled, when it shall so desire, to have bonds certified to an amount of \$742,477.11. During the year there has been redeemed and cancelled \$144,906.65 of the underlying bonds. The underlying bonds redeemed to date amount to \$983,513.24.

It will be noted that owing to the war and the general financial depression, this company has suffered a considerable decrease in its gross revenue, this being partly offset by a saving in operating expenses. In accordance with the desire of the City of Montreal to remove as far as possible the overhead wires in the streets, the company is now proceeding at considerable expense to place its overhead feed wires in the municipal conduits which have so far been provided for that purpose. Keeping in view the future growth of the city, the company has been working on a plan to rearrange its power distribution in order to make the power from the different stations interchangeable. This work will take some time to complete, but will place the company in a better position to handle the future traffic of the system. The property has been maintained in a high state of efficiency and is in excellent condition.

The company regrets having to report the death of Alexander Stewart, Auditor for the last eleven years. Pending the election of an Auditor, J. J. Robson was appointed to fill the vacancy to the end of the fiscal year.

In conclusion, your directors desire to place on record their appreciation of the valuable and faithful services rendered by the officers and employees of the company.

### Statistics.

Passengers carried .....	153,576,271
Car earnings per passenger .....	1.17
Transfers .....	53,316,530
Total passengers carried .....	206,992,801
Car earnings per passenger total carried .....	3.07

Assets.	
Cost of road and equipment to June 30, 1914 .....	\$36,601,388 87
New construction for the year .....	621,125 05
	\$37,222,513 92
Accounts receivable .....	333,799 66
Stores .....	355,124 69
Cash in bank and on hand .....	68,810 93
Underlying securities redemption fund .....	163,486 76
	921,222 04
Investments .....	356,262 50
	\$38,499,998 16
Liabilities.	
Capital stock (common) subscribed ..	\$3,000,000 00
Less unpaid and subject to call .....	36,030 00
	\$2,963,970 00
Debenture stock .....	*16,000,000 00
First and refunding mortgage 5% gold bonds due July 1, 1941 .....	13,335,000 00
Underlying bonds:	
4½% due Aug., 1922 .....	681,333 33
4½% due May, 1922 .....	1,500,000 00
4½% due May, 1922 .....	2,238,666 67
	\$4,420,000 00
Less redeemed and cancelled to date..	983,513 24
	\$3,436,486 76
Mortgages .....	21,863 00
	\$35,757,319 76
Accounts and wages payable .....	\$409,399 21
Accrued interest .....	232,606 38
Accrued tax on earnings .....	295,923 64
Employees' securities .....	21,755 58
Unclaimed dividends .....	1,956 57
Unredeemed tickets .....	171,918 55
Suspense .....	91,353 41
Dividend payable Aug. 1 .....	74,100 50
	1,298,613 84
Capital reserve .....	600,000 00
Contingent renewal reserve .....	179,899 21
Surplus .....	664,165 65
	1,444,064 86
	\$38,499,998 16

\*Includes amount due on shares not yet exchanged.

In presenting the report, the President, E. A. Robert, commented on the results of the year's operations, which in spite of war conditions showed a very fair balance. The directors, for whose services during the current year, \$32,000 was appropriated, were re-elected as follows.—President, E. A. Robert; Vice Presidents, J. W. McConnell and F. H. Wilson; Hon. J. M. Wilson, J. M. McIntyre, P. J. McIntosh, W. C. Finley, G. G. Foster, K. C., and W. G. Ross. J. J. Robson was appointed Auditor.

**Increased Car Fares in Great Britain.**—The Corporation of Birmingham has advanced all street railway fares 10% on account of war conditions. It is believed that this will produce about \$300,000 a year additional revenue. At present the tramway lines carry a passenger two miles and 600 yards for a penny fare. Under the new scale the average penny zone will be reduced to one mile, 1,200 yards. Outside this zone there will be an increase of a halfpenny on the present rates. The workmen's fares will go up a halfpenny on each return ticket. As showing the effect of war conditions the receipts of the Glasgow tramways for the last year were £1,070,353, a decrease of £8,083 from the preceding year.

**Interurban Cars for Toronto Suburban Ry.**—In the description of the new cars for this company's Toronto-Guelph line, in Canadian Railway and Marine World for July an error was made in stating that each car would be equipped with four 80 h.p. motors. They will each have four 110 h.p. motors.

## Sudbury-Copper Cliff Suburban Electric Railway Construction.

It is expected that this company's line from Sudbury to Copper Cliff, Ont., will be placed in operation by Oct. 1, the major portion of the line now being completed and ready for operation. The line at present under construction extends from Sudbury to Copper Cliff, commencing in Sudbury at Ramsay Lake, following John, Station, Durham, Cedar, Liscar and Elm Sts., the latter being the main street of Sudbury, to the outskirts of the town, following the highway alongside the C.P.R. Soo line to the Canadian Copper Co.'s property in Copper Cliff, which it will skirt into the town. The line will follow the border of this property in order that the slag filling which the company is making in the low land of its property, will not interfere with the railway location, so that no relocation will be required.

In Sudbury, 0.43 mile of line was laid last year on a six-inch concrete base in order that the permanent pavement being laid by the municipality might be carried out. To date, track has been laid on three miles of the line towards Copper Cliff, and the balance of the seven miles between the two municipalities has been graded ready for track laying, the steel and overhead work being ready for placing. The line is being laid with 80 lb. T rail on cedar ties, at 20 inch centres. Three inch gravel ballast is being used, and the rails are being electrically bonded. The maximum grade will be 3½ per cent., with practically no curvature outside the towns. There will be no bridges, and only three timber pile culverts of 15 ft. span.

The overhead construction in the towns will be tubular steel poles, with cross spans, and in the country, bracket construction on wooden poles. The trolley wire will be 4-0 copper. Six hundred volt d.c. will be used, power being obtained from the Wana-pitei Power Co. at 2,300 volt, 3 phase, 60 cycle a.c. A 300 k.w. induction motor generator set is to be installed at Ramsay Lake in the municipal pumping station and electric lighting plant, where the power will be received from the power company and converted. Tenders are now being received for this electrical equipment.

Tenders are also being received for three 20 ton double truck steel frame passenger cars, with general and smoking compartments, a package freight car, and a snow plough. It is the intention to use electric locomotives for freight service at a later date, but nothing definite has been done in this regard.

Two ten mile extensions to the lines are contemplated, both from Sudbury, one to the Coniston Mines, and the other to the Creighton Mines.

The directors are: President, J. J. Mackey; Vice President, J. H. Morin; other directors, D. M. Morin, T. E. Smith, C. McCrea, M.L.A. Secretary, M. J. Powell.

**The Running Board on Toronto Ry. Cars.**—The Mayor of Toronto, in conjunction with the Street Railwaymen's Union, obtained a summons against the Toronto Ry. Co., Aug. 24, for endangering the lives of its employees by operating cars on its lines having a running board along one side. The application for the summons stated that during this year one man had been killed and 14 men injured as a result of such operation. The matter has been under discussion for some time, and recently the Ontario Railway and Municipal Board declined to compel the company to abolish the use of these cars, chiefly owing to general conditions owing to the war.



## Lake Erie and Northern Railway Electrification.

Canadian Railway and Marine World for August contained general particulars about the electrification of this line which is being built from Galt to Port Dover, Ont., about 51 miles. The line will operate at 1,500 volts d.c. At Galt connection will be made with the Galt, Preston and Hespeler St. Ry., which runs through to Berlin, and now operates at 600 volts d.c.

The substation equipment for the Lake Erie and Northern will consist of permanent substations at Simcoe and Brantford, and a portable substation located for the present at Galt. This will give a substation spacing between Galt and Brantford of 20 miles, and between Brantford and Simcoe of 24 miles, with a stub end feed from Simcoe substation to Port Dover of 7 miles. Each of the three substations will have, for the present, one 500 k.w., 1,500 volt rotary converter, and 555 k.v.a., 3 phase transformer. The transformers may be connected so as to step down from 26,400 volt, 13,200 volt or 6,600 volt, 3 phase, 25 cycle circuits, to the desired a.c. rotary voltage. At the Simcoe and Brantford substations the incoming line will be 26,400 volt, 25 cycle, and at each station will go to the transformer primaries through the usual disconnecting switches, choke coils, and k. 21 oil switches, with overload relays for automatic trip.

The rotaries will be started from half voltage taps in the transformer secondaries, the starting switch being mounted on a small separate panel. The d.c. rotary and feeder panel will differ materially from the standard 600 volt panel. It will be 99 ins. high, of marble with black marine finish; and the circuit breaker and knife switch, in the positive lead, which will be at the top of the panel, will each be operated through bell cranks and rods from oil switch operating handles mounted at a convenient height on the front of the panel. The negative lead will be grounded direct from the rotary. The circuit breaker will be provided with low voltage release and auxiliary alarm switch. The d.c. ammeter with insulated cover will be mounted on the panel, and on a swinging bracket will be mounted a 2,000 v. scale d.c. voltmeter with insulated cover, and an a.c. ammeter and power factor indicator. A three phase aluminum cell lightning arrester, complete with horn gap, disconnecting switches and charging resistance, will be provided for the 26,400 volt circuit, and a s.p. d.c. aluminum lightning arrester for station use, with fuse and balancing resistance used across the 1,500 volt d.c. side. The rotary converter will be of special interest in view of its unusual overload capacity to meet the heavy peak loads of short duration incident to railway operation. While the normal full load rating at 1,500 volts is 333 amperes, it will carry 1,000 amperes for one minute, successful commutation being obtained by the use of commutating poles and pole face windings.

The portable substation will, it is said, be the first of its kind in Canada. All the equipment will be mounted on a standard steel flat car. The transformer will have no housing, but the rotary oil switch and other apparatus will be housed in. For service at Galt the transformer on the portable substation will be connected for 6,600 volt primary, but the connections may be readily changed for primary voltage of 13,200 or 26,400 volts for operation at other points along the line. The complete equipment for the three substations is being manufactured by the Canadian General Electric Co. at its Peterborough works, and the manufacturers will install the appar-

atus at the Simcoe and Brantford substations and equip the portable substation at the Peterborough works.

The L. E. & N. R. has ordered from the Canadian Westinghouse Co., Hamilton, Ont., two 60-ton, 1500-volt direct current locomotives, six 1500-volt quadruple car equipments, equipment for two trailer cars, and new universal air brakes for both motor and trailer cars. The locomotives are designed to operate on 1500-volts direct current with the following characteristics: swivel truck, standard gauge, diameter driving wheels 36 ins.; truck centre distance 17 ft. 8 ins.; height from top of rail to top of cab 12 ft.; width over all 10 ft.; tractive effort 9200 lbs., with average of 600 volts at motor.

Each of the six 1500-volt motor car equipments will consist of four 85 h.p. ventilated type motors and AB unit switch type of control. A new and improved type of automatic brake will be used, embodying the features made possible by the use of a universal valve which will be the mechanism that will operate to apply and release the brakes and charge the reservoirs, and it will so far correspond to the triple valve in common use. The universal valve will be of the built up type, a simple form of triple valve being the base. This will make it possible to install and operate the equipment, if desired, in stages by adding to the simplest form of valve, without discarding any of the valve portions, other valve portions as they are demanded by an advance in service requirements, up to the complete form of the device, which will be electro-pneumatically operated. The brake valve, type M-23, will embody improved features as compared with the ordinary automatic brake valve, such as limiting of brake pipe reductions to the predetermined desirable amount for service applications; prevention of overcharge of the equalizing reservoir; and quick response of brake pipe reduction by the combination of direct and equalizing piston exhaust ports. A supplementary reservoir is to be used to give high emergency brake cylinder pressure and graduated release as well as to assist the brake pipe in recharging the auxiliary reservoir. The compressor will be driven by a 1500-volt d. c. motor and is known as the D. K. type. It is of the same general design and construction as other Westinghouse compressors, but is especially rugged and adopted to meet severe operating conditions. The Westinghouse governor synchronizing system will be used to insure equal division of compressor labor, thereby securing reliability of air supply and low expense for compressor maintenance. This will also be used on the locomotives. The brake equipment for the electric locomotives will be the Westinghouse no. 14 EL.

**The Toronto Ry. and its proportion of cost of Subways.**—The Board of Railway Commissioners has granted the Toronto Ry. permission to appeal to the Supreme Court against the Board's order to contribute to the cost of the subway built by reason of the elevation of the C. P. R. tracks across Avenue Road. The permission is granted on the following questions,—Whether the Board had power to make the order under the agreement of the Toronto Ry. with the City of Toronto of 1891; whether the company is not entitled to have the city furnish the company, in the exercise of its running powers, a street or highway known as Avenue Road, and whether, if such was the effect of the agreement, the company should have been ordered to contribute to the cost of the construction of the subway.

## Winnipeg, Selkirk and Lake Winnipeg Electric Railway.

This company, which is a subsidiary of the Winnipeg Electric Ry., owns and operates a line from the northern boundary of the city of Winnipeg to Selkirk, near Lake Winnipeg, 21.44 miles; and a branch line, completed at the end of 1914, from Middlechurch to Stonewall, 16.67 miles, a total of 38.11 miles. The main line to Selkirk passes along the west bank of the Red River, while the branch line which was completed to Stony Mountain in 1913, and to Stonewall in Dec., 1914, runs in a nearly straight line northeasterly from Middlechurch, passing through the rural municipalities of St. Paul and Rockwood. For about five miles into Stonewall it parallels the C. P. R.

The right of way of the branch varies from 45 to 90 ft. in width and it is practically all owned by the company. At Stony Mountain there is a grade of 2.6% which is practically the only one on the line except for the Masters Junction subway. There are few curves on the branch, the most important being two of 16 degrees each. The only bridge structure is a subway at Masters Jct., which provides a crossing under the C. P. R. Lake Winnipeg Branch. This subway is about 250 ft. long, and is of heavy construction. The reinforced concrete work rests on pile foundations placed at 3½ ft. centres. The abutments are reinforced with steel rails. The subway is provided with 5% grades at either end, necessitating a drain of about half a mile long to the Red River. The track is laid with 60 lb. rails, A. S. C. E., specifications, laid on tamarack ties spaced 27 in. centres, with gravel ballast. The transmission system is carried on 45 ft. cedar poles. Power for both the main and branch lines is obtained from the Winnipeg Electric Ry. Co. at 2,200 volts, and is stepped up to 13,200 volts for transmission to the three substations located at Middlechurch, Lockport and Stony Mountain. At these stations the current is converted into d. c.

Connection is made at the northern limits of Winnipeg with the Winnipeg Electric Ry. lines.

## Regina Municipal Railway Earnings, Etc.

Operating results for June, compared with those for June, 1914:

	1915.	1914.
Revenue .....	\$12,311 85	\$19,722 53
Operating expenses .....	13,658 46	17,368 14
Capital charges .....	9,137 58	7,476 52
Operating deficit .....	1,346 61	2,354 39
		(Surplus.)
Passengers carried .....	257,994	397,087
Expenses per car mile, without power .....	13.93c	15.02c
Expenses per car mile, with power .....	18.09c	20.03c
Power per k.w.h. ....	2.08c	2.00c
Platform wages per car hour .....	74.17c	76.52c
Expenses percentage of earnings, less capital charges .....	110.94%	
Expenses percentage of earnings, with capital charges .....	185.15%	

**Rumored Purchase of the Chatham, Wallaceburg and Lake Erie Ry.**—In regard to persistent rumors to the effect that the Hydro Electric Power Commission of Ontario was negotiating for the purchase of the Chatham, Wallaceburg and Lake Erie Ry. as a part of its projected electric railway scheme, Sir Adam Beck, Chairman of the Commission, is reported to have stated, recently, that no negotiations had been carried on and none were under way, in connection with the railway mentioned.



### The Montreal Tramways Company's Franchise.

The litigation in connection with the proposal to grant a new franchise to the Montreal Tramways Co. includes the original injunction proceedings; the application to convict the Mayor and certain of the controllers for contempt of court; the appeal against these proceedings; the quo warranto proceedings against Controller Herbert, and certain proceedings against Controller Macdonald. Negotiations are proceeding with the object of having all the cases heard together in the fall. Meanwhile affidavits and other declaratory documents are being filed in one or other of the causes, and the affair is being brought forward upon one technical point or another. The main result of the proceedings is that the injunction restraining the Board of Control and the City Council from discussing the franchise question until the hearing of the injunction application "on the merits" is binding.

### Fare Reductions on British Columbia Electric Railway and the Jitney Traffic

Full particulars of the fare reductions made in Vancouver and Victoria, and between Vancouver and New Westminster, have been given by Canadian Railway and Marine World in previous issues. The results are of very general interest and for purposes of comparison we will give the April and June monthly figures. The reductions went into effect in Vancouver and Victoria May 1, and between Vancouver and New Westminster May 17. Following are the figures:—

	Gross earnings:	April, 1915.	June, 1915.
Vancouver City .....		\$88,592 71	\$87,445 05
Victoria City .....		25,859 60	26,874 03
District 1, interurban ....		13,869 10	14,936 22
Passengers carried:			
		April, 1915.	June, 1915.
Vancouver City .....		1,788,025	2,249,951
Victoria City .....		523,323	720,181
District 1, interurban ....		144,181	153,036

Increases and decreases in earnings per car mile as between April and June results:

	Per car mile.
Vancouver City, decrease .....	0.70c
Victoria City, decrease .....	2.41c
District 1, interurban, increase .....	0.91c

From the above figures it will be seen that while in Vancouver the company carried approximately 20% more passengers in June than in April, the earnings per car mile showed a decrease. In Victoria both earnings and passengers carried showed an increase, while the earnings per car mile showed a decrease owing to additional car miles operated. On District 1, interurban, a slight increase was shown.

While the months of May and June have been used for comparison purposes these figures do not show exactly the true situation respecting the revenue. For instance, prior to the reduced fare being put into effect the revenue traffic curve showed a downward tendency, and it was not until after the tango tickets were put into force that this curve commenced to show an increase—and at present the daily earnings are higher than they were at the time of inaugurating the reduced fare.

The jitney situation on the mainland as well as on Vancouver Island has improved to some extent due, it is thought, to reduced fares adopted by the B. C. E. R. Co., and not as a consequence of regulations put into effect by the city of Vancouver, which were of very little practicable assistance to the company. From the following figures it will be seen that the daily average number of

jitneys operating in Vancouver commenced to decrease after the first week the tango tickets were in effect; a decrease is also noted in Victoria:—

Week ended:	Vancouver.	Victoria.
May 1 .....	294	125
May 8 .....	301	124
May 15 .....	297	105
May 22 .....	229	98
May 29 .....	276	114
June 5 .....	241	125
June 12 .....	226	94
June 19 .....	229	93
June 26 .....	236	126
July 3 .....	218	114
July 10 .....	226	94
July 17 .....	220	85
July 24 .....	216	110

The jitney operators will, of course, find the summer months the most profitable, but with the coming of the autumn and winter months, it is expected that the reduced fare tickets will result in a much larger number of passengers being carried on the electric railway cars.

### Fares on the Winnipeg, Selkirk and Lake Winnipeg Railway.

The Public Utilities Commissioner of Manitoba, H. A. Robson, made an order recently in regard to the Winnipeg, Selkirk and Lake Winnipeg Ry. and its owning company, the Winnipeg Electric Ry., which modified an order made April 1, 1914, in respect to fares in the rural municipality of West Kildonan, which adjoins Winnipeg on the north. Following is a summary of what is substituted for clause 1 of the previous order:—

In the division described as A in the previous order, viz., between the north limit of the City of Winnipeg and Templeton Ave. the Winnipeg, Selkirk and Lake Winnipeg Ry. shall sell to any person on its cars in the division for 25c. each strips or parcels containing 4 combination tickets, that is to say, 8 tickets, 4 of which shall be good each for one fare for one passenger on the Selkirk line in the division, travelling either way, and the other 4 of which shall be good each for one of the trips on the Winnipeg line following: Going south on entering the car at the north limits of Winnipeg, on the Main St. line only, with a right to a transfer as in case of the ordinary city fare. Going north, on any car of the Winnipeg system going to the north limit on Main St., or if the car is not so destined, then with a transfer only to a car bound for the north limit of Winnipeg.

To school children travelling on the said line in the said division, the company shall sell for 10c. each, strips each containing five tickets, each ticket to be good for one trip, on any day in either direction on the company's lines within Division A in the municipality.

The present rate available in the municipality, of 25 tickets for 50c. is cancelled, and there are substituted tickets, each good for one adult fare within Division A as follows: Six white tickets, good at any time, for 25c. Eight red tickets good on Sundays in all hours, and on week days, before 8 a.m., and between 5 and 6.30 p. m.

In respect of through traffic between points in the City of Winnipeg and Kildonan Park, which is owned by the city, but is situated west of Kildonan, there shall be established upon the lines of the two railway companies a joint rate over the said lines available to the public, in the months of May, June, July, August and September, of each year, on Saturdays and Sundays, and every Dominion or Provincial holiday, and every half or whole municipal holiday, and after 5 p.m. on every other day, represented by tickets to be sold on the cars at 5 for 25c., each ticket to be good for one journey

from any point in Winnipeg to Kildonan Park or return, and to consist either of two portions, one for use on the Winnipeg line, (with a transfer if requisite, to a line going to the north limit of Winnipeg or Main St.), and one for use on the Selkirk line or to consist of one ticket good for the part of the journey in Winnipeg (and such transfer if requisite) and a transfer good on the Selkirk line, and the return trip may be made likewise by means of a two-part ticket, one part good for the fare on the Selkirk line, and the other part good for the fare on the Winnipeg line, with one transfer, and during the said days children under 5 years of age, accompanied by parents or guardians, be carried free on the lines, and children over 5 and under 12 years of age, be carried on the same basis as adults, but with 7 two-part tickets instead of 4. The companies are to join in establishing arrangements for the care of such traffic and are at all times to furnish adequate car accommodation for the traffic.

### Montreal Tramways Mutual Benefit Association.

Following are extracts from the report for the year ended April 30, 1915:

Members disabled through sickness or injury .....	1,236
Visits made by physicians to disabled members .....	792
Consultations given by physicians to disabled members .....	7,509
Prescriptions issued .....	5,704
Paid for sickness and injury .....	\$11,407.89
Paid for medicine .....	1,758.18
Paid for pensions .....	891.00
Paid for withdrawals .....	588.36
Paid for death and burial insurance .....	9,200.02

The committee is pleased to report the expression of gratitude from the beneficiaries of deceased members of the Association for the prompt payment of the death and burial benefits. During the year five members requested to have their benefits commuted, which was agreed to by the committee.

The eleventh annual picnic under the Association's auspices netted a profit of \$7,699.40. The committee gratefully acknowledges a special donation of \$3,000 from the Montreal Tramways Co., making the total contributions received from the company \$19,015.82, which amount, added to the fees and dues received from the members, viz.—\$19,140.50, and the proceeds of the picnic, and the interest of investments and bank deposits, amounting to \$16,005.11, makes a total revenue for the year of \$54,161.43, and the expenses being \$33,854.43, leaves a surplus of \$20,307.00.

Revenue.	
Accumulated reserve from preceding years .....	\$136,154.40
Members' fees and dues .....	19,140.50
From company fees, \$390; dues, \$9,375.25; special donation, \$3,000.00; expenses of management, \$6,250.57.	19,015.82
Picnic .....	7,699.40
Interest on investment .....	1,827.77
Interest on bank deposits .....	477.94
	\$190,615.82

Expenditure.	
Sickness and injury .....	\$11,407.89
Deaths and burials .....	9,200.02
Medicine .....	1,758.18
Medical attendance .....	5,600.00
Medical examination .....	158.50
Withdrawals .....	588.36
Pensions .....	891.00
Management expenses .....	6,250.57
	\$33,854.43

Accumulated reserve .....	156,761.40
In bank .....	11,871.81
Invested .....	\$44,889.59
	\$31,522.80

J. E. Hutcheson, General Manager, is President of the Association, and Patrick Dubee, Secretary-Treasurer of the Company, is also Secretary-Treasurer of the Association.



## The Calgary Municipal Railway Investigation.

The presentation on Aug. 17 of Mr. Justice Simmons' report of his recent investigation into a series of charges made by Alderman Frost, against T. H. McCauley, Superintendent, Calgary Municipal Ry., effectively disposed of a matter which has been the cause of considerable discussion for several months. The charges made were 14 in number, and were as follows:—(1) Breach of faith with the men; (2) Ignoring instructions of the City Council; (3) Discrimination by suspension or dismissal of "round robin" men upon trumped-up charges, while ignoring the same offences on the part of others; (4) Failure to dismiss or suspend pets although guilty of serious offences; (5) Interfering contrary to agreement with the grievance committee by blocking its decisions; (6) Adopting the German espionage system; (7) Condoning the presence of street railway employees in uniform in bars by not enforcing the rules prohibiting this; (8) Constituting it an offence for certain employees to be seen speaking to Aldermen Frost, Crandell or Jennison; (9) Influencing witnesses; (10) Bringing reproach upon the Mayor, aldermen and civic administration by unseemly conduct before the City Council, the Street Railway Association and at other public places; (11) Receiving salary for weeks of lost time while at Banff; (12) Interfering with and seeking control of the Employees' Sick Benefit Association; (13) Incompetency—(a) By allowing illiterate and unskilled foreigners to handle electric current; (b) By wasting current through defective construction, and (c) By destroying watermains through unnecessary electrolysis; (14) Seriously jeopardizing the city's interests by re-employing men who were involved in an accident on the line in which two lives were lost.

It will be seen that the majority of these charges covered the relationship existing between the Superintendent and the men, while the remainder had to do with the Superintendent himself. Of these latter, the charge was withdrawn, and no evidence was offered upon section c of charge 13. Evidence was given in support of Alderman Frost's allegations by 37 witnesses, and by 24 witnesses on behalf of Superintendent McCauley. The evidence showed that all the charges in which the employees were concerned centered around some half dozen men, who sought to dominate the men's association, and to dictate to the management. The association is independent of any federated body of street railway employees, and it has been and continues to be the policy of the management to keep it free from outside interference,—the railway being owned by the city, and the employees all duly qualified provincial constables. The half dozen or so trouble-makers were got rid of in February, and from that time, until the investigation was ordered in June, Alderman Frost kept making complaints, which it was finally thought desirable to have a stop put to by a judicial enquiry. The evidence showed that the whole affair was of the most trivial description, and the findings, even where any of the complaints appear to have had some cause, show that the Superintendent has been doing his work well and conscientiously in accordance with the free hand which he has had in the management of affairs since the railway's inception.

The findings in which it is said there is some ground for complaint against Mr. McCauley are:—(1) He was wrong in requiring the men who had signed the "round robin" to sign an application again acknowledging that they had no right to appeal. (2) The only discrimination against the signers of

the "round robin" was as in finding to complaint one. On section B of complaint 13, Mr. McCauley must share the blame along with the engineering and public works departments of the city service for poor construction on the bases for the railway on certain streets laid during a "period of reckless prodigality," when "quantity" rather than "quality" of work was the policy of the administration. These, it will be seen, are minor points, even when the character of the whole charges are considered. The judge exonerated Mr. McCauley on all the other charges. The final results:—Charges made, 14; of which one is sustained; section two of charge 13 is sustained to some extent; one charge is withdrawn, and all the others are dismissed.

The judge's report contained a second part making some observations upon the working of the railway, for the purpose of creating discussion. It will be taken up at an early meeting of the City Council.

Since the removal of the half dozen or so men in February the relationship between the management and the employees has been most harmonious, as is evidenced by the fact that among other things the employees have contributed the cost of a machine gun for the Canadian troops, and that they are contributing to the patriotic funds, and assisting with comforts, those of their own body who have enlisted for overseas service.

## Brantford Municipal Railway Half-Yearly Report.

The commissioners appointed under the provisions of the Brantford, Ont., city by-law, have submitted a report for the six months ended June 30, the details of which are as follows:

Gross revenue	\$42,505 79
Expenditure	34,221 89
Net revenue	\$8,283 90
Bond and mortgage interest.	\$3,257 75
Debt interest on \$200,000	5,000 00
	8,257 75

The commission has assumed the following charges:	
Local improvement and tax for interest on pavements, first instalment.	\$ 1,251 00
Sinking fund	2,214 00
	\$ 3,465 00

The net result, after payment of interest and assuming the taxes and sinking fund, is a deficit for the six months of \$ 3,438 85

The commissioners express the hope that during the current half year, the line may come to be on a self sustaining basis. The rate per car mile earned on the city lines has increased from 14.7 to 17, and the bettered service, the extension to Eagle Place and the southern suburbs of the city, together with the traffic consequent on the acquirement of Mohawk Park, should all conduce to a larger earning in the future.

A system of accounting for all stores and supplies has been inaugurated, and the management is carefully watching all details tending to a reduction of operating expenses.

The expenditure for improvements and betterments during the six months was \$78,253.81, of which, the following are the chief items:

Eagle Place loop	\$23,847 01
New cars	14,607 53
Paris power plant	5,496 55
Rebuilding, etc., old cars	15,076 01
Grand Valley Ry., betterment	7,828 99
Rebuilding power house for terminal.	5,898 86
Completing Paris station	1,054 00
Sundries	4,118 55

The total valuation of the property under the commission, is \$455,327.11, with a liability including city pavement and tax account, of \$458,765.96. Practically all the funds, \$270,000, provided under bylaw, have

been expended, and further extensions cannot be undertaken until additional funds are provided.

The system is now operated entirely by hydro electric power furnished by the Hydro Electric Power Commission of Ontario, at Brantford, Paris and Galt, and through the facilities afforded by the improvements at the old power house, Brantford's street car and lighting utilities are virtually working together under one manager, although under two commissions.

## Electric Railway Finance, Meetings, Etc.

British Columbia Electric Ry., and allied companies.

	June 1915	June 1914	June 30, 1915	June 30, 1914
Gross earnings	\$498,093	\$661,383	\$7,306,563	\$8,789,287
Expenses	494,315	509,417	5,994,212	6,449,825
Net earnings	3,778	150,966	1,312,351	2,348,462

The directors have announced that owing to the large decrease in the earnings, they are unable to recommend any further dividends on the preferred and deferred ordinary shares for the year ended June 30. It will be noticed in the foregoing table that the net earnings decreased by \$1,036,111, as compared with the previous year, this being a little over 44%. Rather more than two-thirds of this decrease took place during the first half of 1915.

Hamilton St. Ry. The gross earnings for the quarter ended June 30, were \$130,627.77 against \$154,846.57 for the same period 1914. The amounts paid to the city as percentage on these earnings were \$10,450.21 and \$12,387.72 respectively.

London St. Ry.

	June 1915	June 1914	Jan. 1 to June 30, 1915	Jan. 1 to June 30, 1914
Gross earnings	\$38,301.11	\$38,456.05	\$186,260.51	\$177,829.10
Expenses	23,473.71	23,572.55	134,613.26	128,996.60
Net earnings	9,827.40	9,883.50	51,647.25	48,832.7

	July 1915	July 1914	July 31, 1915	July 31, 1914
Gross earnings	\$36,795.52	\$34,134.48	\$223,056.03	\$211,968.58
Expenses	23,666.38	24,278.04	153,279.64	153,274.64
Net earnings	13,129.14	9,856.44	69,776.39	58,693.94

Toronto Ry., Toronto and York Radial Ry., and allied companies.

	June 1915	June 1914	Jan. 1 to June 30, 1915	Jan. 1 to June 30, 1914
Gross earnings	\$787,558	\$861,938	\$4,810,063	\$5,025,926
Expenses	388,013	445,150	2,540,317	2,614,259
Net earnings	399,545	416,788	2,269,746	2,411,667

Toronto Ry.—Under the trust deeds of Sept. 1, 1892, 306 of the 4½% sterling bonds, and 79 of the 4½% currency bonds were drawn for payment, Aug. 31.

The receipts of the Toronto Ry. from Jan. 1, and the percentages paid to the city, for 1915, compared with those for 1914, are as follows:

	1915	City percentage	1914	City percentage
Jan....	\$ 471,226	\$ 70,486	\$ 501,844	\$ 75,277
Feb....	440,314	67,047	461,274	72,060
Mar....	488,468	93,141	530,751	102,153
Apr....	467,702	93,540	501,435	100,287
May....	468,953	93,790	534,465	106,893
June...	450,582	90,116	525,033	105,106
July...	440,086	88,821	495,882	103,772
	\$3,236,331	\$596,941	\$3,550,684	\$605,545

Winnipeg Electric Ry.

	June 1915	June 1914	Jan. 1 to June 30, 1915	Jan. 1 to June 30, 1914
Gross earnings	\$255,549	\$335,012	\$1,752,256	\$2,091,582
Expenses	170,904	187,570	1,130,612	1,213,702
Net earnings	84,645	147,442	621,644	877,880

The Public Service Corporation of Quebec, which was incorporated under the Quebec Companies Act in June with an authorized capital of \$3,000,000, has bought at sheriff's sale the Dorchester Electric Co.'s plant and business and intends distributing electric power in the City of Quebec and its vicinity. We are officially advised that it has no intention of building any railway. The officers, J. C. Smith, President; H. Murray, Vice President; W. S. Hart, Treasurer; and Jas. Wilson, Secretary, are all connected with the Shawinigan Water & Power Co.



## Electric Railway Projects, Construction, Betterments, Etc.

**Brantford Municipal Ry.**—Power supplied by the Hydro Electric Power Commission of Ontario is being used for the operation of the Brantford Municipal Ry., the contract with the Western Counties Electric Co. having been terminated July 31. (July, pg. 277.)

**Calgary Municipal Ry.**—We are officially advised that the paving work on a quarter of a mile of track in the city is in progress. T. H. McCauley is Superintendent. (Aug., pg. 318.)

**Chatham, Wallaceburg and Lake Erie Ry.**—We are officially advised that the company is contemplating the building of two sidings, each 300 or 400 ft. long, on the main line near Cedar Springs, Ont., for the loading of sugar beets, etc., and a freight shed, about 90 by 24 ft., in Chatham. W. Norris, Chatham, Ont., General Manager.

**Edmonton Radial Ry.**—We are officially advised that 6,400 ft. of permanent track is being laid on Portage Ave., Edmonton, Alberta. L. E. Smeaton is acting Superintendent. (Aug., pg. 318.)

**Hydro Electric Power Commission of Ontario.**—The village of Port Dover, Ont., has joined the Greater Hamilton and Lake Erie branch of the Ontario Hydro Electric Railway Association, with the object of promoting the building of an electric railway from Hamilton to Port Dover.

Following up the reported negotiations with the Chatham, Wallaceburg and Lake Erie Ry., and with the Toronto Suburban Ry., it was reported from Hamilton recently that there was an idea of the Dominion Power and Transmission Co.'s electric railways and power plant being taken over, but the Vice President, W. C. Hawkins, is reported to have stated, Aug. 4, that no negotiations were going on. (Aug., pg. 318.)

**Montreal and Southern Counties Ry.**—We are officially advised that the company has placed an order with the Canadian Westinghouse Co., Hamilton, Ont., for a synchronous motor generator set and transformers. The company is building a sub power station at Granby, Que., for the operation of the extension now under construction from St. Cesaire, Que. (Aug., pg. 318.)

**Niagara, Welland and Lake Erie Ry.**—The ratepayers of Welland, Ont., have sanctioned an agreement between the Town Council and the company, by which the latter is to pay \$60,000 in 20 annual instalments as its share of the cost of street paving. (May, pg. 190.)

**Quebec Ry., Light and Power Co.**—The Quebec City Council is considering steps to compel the company to extend its lines in Limoilou, Beauport and Charlesbourg. The city attorney has advised the Council that the city has power under the agreement to compel the company to build its lines to the city limits. (Aug., pg. 318.)

**Sandwich, Windsor and Amherstburg Ry.**—We are officially advised that the company has under construction half a mile of double track on London St., Sandwich, Ont. (July, pg. 277.)

**Saskatoon Municipal Ry.**—The removal of the street railway track on Lansdowne Ave., Saskatoon, Sask., from the side to the centre of the street was reported to have been completed Aug. 12. About 1,000 ft. of track has been removed.

**St. John Ry.**—Commissioner Potts reported to the St. John, N.B., City Council, July 31, that the company had made considerable repairs on the Mill St. line. Subsequently repair work was started on Douglas Ave., and arrangements made for doing other

work on the several lines which the Commissioner reported as needing immediate repair, July 26. (Aug., pg. 318.)

**The Galt, Preston and Hespeler St. Ry.** has protested to the Berlin, Ont., City Council against the charge of \$75 a month proposed for the use by the G., P. and H. S. R. for rights on King st. from the city limits to Water St., and along Wilmot St. The matter is being considered by the Council committee in charge of the operation of the Berlin and Waterloo St. Ry., in consultation with M. N. Todd of the G., P. and H. S. Ry., with a view to an amicable settlement. It is reported that in the event of a settlement not being reached the company will use a branch line running to Waterloo exclusively, and erect a station on Queen St. South for the accommodation of city passengers. (April, 1914, pg. 184.)

**The Toronto Ry.** applied to the Ontario Railway and Municipal Board, Aug. 20, for permission to extend its Yonge St. line north through the subway under the C.P.R. and up to Farnham Ave., the present southern terminus of the Toronto and York Radial Ry.'s Metropolitan Division. In consequence of the city's opposition the hearing of the application was postponed until Aug. 26.

**Toronto Civic Car Lines.**—Tenders are under consideration for the rods and plates and for special track work on the Lansdowne Ave. extension of the civic car lines, and for machine shop equipment at Danforth Ave. car barns. (Aug., pg. 318.)

**The Windsor, Essex and Lake Shore Rapid Ry.**, we are officially advised, is doing some paving work along its lines in Essex, Ont. (July, pg. 277.)

## Regina Municipal Railway, History and Statistics.

A Municipal Manual for 1915 compiled by the City Clerk of Regina, Sask., gives the following particulars:

The construction of the street railway as a municipal enterprise was projected in 1910. Actual construction began in the early part of 1911 and operation of cars was commenced July 29, 1911. At that time the system consisted of about 6 miles of track and 6 cars. Now there are about 30 miles of track within the city limits, 14¾ miles of this being in pavement. The rolling stock is as follows: 34 passenger cars, 2 sweepers, 1 motor haulage car, 30 freight cars.

Total expenditure up to Dec. 31, 1914, was \$1,723,830.00, of which \$266,065.00 was for cars and car equipment.

Operation statistics for the year 1914 are as follows:

Revenue passengers carried .....	4,677,512
Transfer passengers carried .....	626,905
Total .....	5,304,447
Passenger car mileage .....	1,081,996
Other car mileage .....	37,313
Total .....	1,119,309
Passenger revenue .....	\$200,500 77
Other revenue .....	18,415 10
Operating expenditure .....	\$218,915 87
	\$221,506 39

"An adequate service is given to and from all parts of the city. At present, on account of the concentration of the greater part of the population within easy walking distance of the retail business district, a comparatively low percentage of the people are making use of the street cars. However, with the city's development this utility will prove to be one of its most valuable assets."

## Electric Railway Notes.

Superintendent T. H. McCauley, in a report to the City Commissioners, Aug. 13, recommended certain alterations in routes of cars on the Calgary, Alberta, Municipal Ry., estimated to effect a saving of \$50 a day in operating expenses.

The ratepayers of Rockwood, Man., voted by a majority of seven to one, Aug. 10, in favor of the operation of electric cars on Sundays within the area of tp. 13, two and three east. Stonewall municipality will vote on a similar bylaw in the near future.

A board of conciliation is considering the question of the wages of British Columbia Electric Ry. employees. The board consists of Justice Macdonald, chairman; A. C. McCandless representing the company, and J. H. McVety the men.

The investigation into the relations between the officials and employees of the Calgary Municipal Ry., which was begun before Justice Simmons, July 8, was brought to a close, as far as the examination of witnesses was concerned, Aug. 2.

The Toronto and York Radial Ry. Metropolitan Division employees held their annual picnic at Bond Lake, Aug. 13, when there were about 800 present. The employees' executive committee has contributed \$100 from the picnic fund to the North Toronto Red Cross auxiliary.

The operation of the Saskatoon-Sutherland electric line is being discussed by the authorities of Saskatoon and Sutherland, Sask. It is understood that in addition to the approval of the ratepayers of these two towns, the approval of the ratepayers of Cory, through which the line passes, will be necessary.

The Edmonton City Council has appointed a committee to assist the Commissioner of Utilities in the operation of the Edmonton Radial Ry. until the special committee appointed to investigate the situation makes its report. The committee consists of Alderman Frith, chairman; Aldermen McArthur, Douglas and Sheppard.

**Ontario Accident Compensation to Electric Railway Employees.**—The first fatal case of injury to a Toronto Ry. employee since the Ontario Workmen's Compensation Act went into force was that of Frank McMullen, a conductor who died in July from injuries received by falling from the running board at the side of a car while collecting fares. He left a widow and three children. The compensation fixed by the Ontario Workmen's Compensation Board and which is payable by the company through the Board is as follows:—To the widow, \$75 for funeral expenses and an allowance of \$20 a month. Should she marry again she would receive a bulk sum of \$480, equal to two years compensation. For the children, \$5 a month each till they reach the age of 16 respectively.

**Ontario Government Aid to Hydro Electric Railways.**—In speaking at the dinner at London, Ont., after the opening of the electrified London and Port Stanley Railway, the Attorney General, Hon. I. B. Lucas, said that subsidies had been mentioned by the Chairman and that upon this he spoke with reserve. The highest patriotism, as well as the highest prudence, demanded that they keep in mind Mr. Lloyd George's statement that the last hundred million dollars might decide the issue of the war. While the war and unsettled economic conditions remained the Government was not prepared to undertake large capital expenditures.

**The Prince Edward Island Ry. Employees** are giving a machine gun for use in the Canadian Expeditionary Forces.



## Freight Tonnage Carried by Electric Railways.

Returns to the Dominion Department of Railways for the year ended June 30, 1914, show the following number of tons of freight as carried by electric railways:

British Waterloo, Wellesley and Lake Huron Ry. ....	180,801
Grand Island and Hamilton Ry. ....	4,943
British Columbia E.R. ....	356,013
Calgary Municipal Ry. ....	2,701
Canadian Electric Development Co. (Southern, Wallburg and Lake Erie Ry. ....)	5,000
.....	109,157
Corwall E.R. ....	74,690
Edmonton Radial Ry. ....	11,630
Grand Valley Ry. ....	298
Guelph Radial Ry. ....	23,130
Hamilton and Dundas E.R. ....	21
Hamilton, Glenside and Beamsville E.R. ....	40,931
Hamilton Radial Ry. ....	14,195
Hull Electric Co. ....	12,392
Leamington Ry. ....	3,250
London and Lake Erie Ry. and Transportation Co. ....	6,629
Montreal Tramways Co. (1911 figures) ..	302,307
Montreal and Southern Counties Ry. ..	8,431
Niagara Falls Park and River Ry. ....	2,833
Niagara, St. Catharines and Toronto Ry. ....	365,810
Oshawa Ry. ....	170,019
Port Arthur E.R. ....	14,190
Quebec Ry. Light and Power Co. (Citadel Div.) ....	1,140
Riverside Municipal Ry. ....	14,200
Sandwich, Windsor and Amherstburg Ry. ....	2,554
Sarnia S.R. ....	15,911
Suburban Rapid Transit Co. ....	573
Toronto and York Radial Ry. ....	62,334
Windsor, Essex and Lake Shore Rapid Ry. ....	39,840
Total .....	1,845,923

## Edmonton Radial Railway Superintendent Resigns.

For some time past there has been evidence of friction in the management of the municipally owned Edmonton Radial Ry. The matter has been frequently discussed at council meetings, and a few months ago it was decided that the Superintendent was to be given a free hand in the operation of the line, with the view of pulling the loose ends together, reducing the operating cost and at the same time giving an efficient service. Subsequent discussions in the council appeared to indicate that the free hand which was to be given was, to a great extent, withheld, and that there was considerable aldermanic interference in the management. This culminated in a notice of motion calling for the Superintendent's resignation, and suggesting that if it was not forthcoming, his services be dispensed with at the earliest legal date, and he be granted leave of absence until then, and also suggesting that the duties be undertaken by the Commissioner of Public Utilities, with a committee of the Mayor and not more than four aldermen to act in an advisory capacity, until an investigating committee reports, when a permanent policy would be adopted.

The motion was not made, but against the wishes of the Mayor, the resignation of the Superintendent was handed in.

J. H. Larmonth, who was appointed Superintendent of the Edmonton Radial Ry. in March 1914, had been, prior to going west, General Manager of the Electric Power Co., owning the Peterborough Radial Ry., the construction of which he was placed in charge of in 1904, and managed along with the electric light and gas plants at Peterborough, Ont., until the property was purchased by the Electric Power Co. in 1910, when he was appointed General Manager. Subsequently he was for some time Secretary of the Canadian Electrical Association. On Aug. 5, Mr. Larmonth, on the eve of leaving Edmonton for Toronto, was presented with an address and an engraved silver

turen, by the radial railway employees.

On another page in this issue is given a comparative statement of the operating results for the first six months of 1915 and 1914. The actual net operating result for that period increased from \$39,060.96 to \$66,673.88, even with a drop in the number of passengers carried, of from 7,537,760 to 5,486,472. For the 1914 period there was a deficit of \$125,077.32, while for the 1915 period this was reduced to \$75,722.50.

## Mainly About Electric Railway People.

J. J. Hackney has ceased to occupy the position of Commissioner of Utilities at Port Arthur, Ont.

H. T. Hazen, M. Can. Soc. C. E., District Engineer Mackenzie, Mann & Co., Ltd., Toronto, and Consulting Engineer, Toronto Suburban Ry., has taken over the duties of Chief Engineer of that line, vice E. T. Wilkie, A. M. Can. Soc. C. E.

P. Hamel, Secretary, Quebec Ry., Light, Heat and Power Co., Quebec, Que., has been appointed a captain in the 69th regiment for overseas service, and is at present in



F. T. Leversuch,  
Traffic Manager, London and Port Stanley  
Railway.

Montreal assisting in enlisting recruits for the service.

F. Morton Morse, Secretary-Treasurer, Winnipeg Electric Ry., returned to Winnipeg at the end of July, after a trip to Great Britain for the benefit of his health. He was a passenger on the s. s. Orduna, which was unsuccessfully attacked by German torpedo-boats.

G. R. G. Conway, M. Inst. C. E., M. Can. Soc. C. E., who resigned the chief engineering of the British Columbia Electric Ry. Co. and the Vancouver Power Co. recently, has opened an office at 409 Royal Bank Building, Toronto, for consulting practice in civil and hydraulic engineering.

Sir John Gibson, director, Dominion Power and Transmission Co., Hamilton, Ont., and former Lieutenant-Governor of the Province, was advised, Aug. 22, of the death, while on active service in Flanders, of his youngest son, Lieut. F. M. Gibson, who was wounded earlier in the war, but had recovered and returned to duty.

Frederick Thomas Leversuch, whose appointment as Traffic Manager, London and Port Stanley Ry., London, Ont., was an-

nounced in our last issue, was born at Shrewsbury, England, Nov. 24, 1884, and entered railway service in May 1905, since when he has been, to June 1910, in General Freight Department, Michigan Central Rd., St. Thomas, Ont.; June 1910 to Oct. 1911, assistant agent, C. P. R., Windsor, Ont.; Oct. 1911 to Dec. 1913, freight agent, C. P. R., Windsor, Ont.; Dec. 1913 to July 15, 1915, Agent, C. P. R., Windsor, Ont.

James J. Callahan, whose appointment as Manager of Operation, London and Port Stanley Ry., London, Ont., was announced in our last issue, was born at New Glasgow, Que., Feb. 25, 1875, and entered electric railway service, Apr. 27, 1897, since when he has been, to 1901, motorman, Montreal Park and Island Ry., Montreal; 1901 to 1908, Inspector and Chief Instructor, Montreal St. Ry., Montreal; 1908 to 1909, Chief Inspector, New York and Queens County Ry., Long Island, New York; 1909 to July 1915, Superintendent of Transportation, Montreal and Southern Counties Ry., Montreal.

The Ottawa Electric Railway Bulletin, the first number of which is dated August, and which is to be issued on the 20th of each month, consists of four pages of reading matter, each 8½ x 11 ins. Its chief function at present is to print important bulletins posted during the month previous to the issue, and also to give articles of general interest to those engaged in electric railway service in Ottawa. It urges efficiency, safety and courtesy, and devotes considerable space to hints on those points. The bulletins are published with comments, and one or two rules are printed with explanations pointing out their most important features. The Bulletin, which is no doubt largely the handiwork of F. D. Burpee, Superintendent, will be a valuable means of communication between the management and the employees.

Lloyd's Register for 1915-16 contains much information of considerable interest concerning the state of the world's shipping tonnage during war times. Notwithstanding the heavy losses of tonnage which have occurred during the war, there is an actual increase of 172,217 tons, in the vessels of more than 100 tons. The number of steamships increased from 24,444 of 45,403,877 tons, to 24,508 of 45,729,208 tons. There was a decrease in the sailing vessels, the numbers being 6,392 of 3,685,675 tons in the previous year, and 6,212 of 3,532,561 for the current year. The total tonnage of the British Empire increased from 21,045,049 to 21,274,068, being greater than the aggregate tonnage of the next seven countries. The second place in the list, which has been held for several years by Germany, is now taken by the United States, with a total of 5,892,639 tons, an increase of 524,445. Germany takes third place with 4,706,027 tons, a decrease of 753,269.

Canada Steamship Lines Ltd., has formed a War Contribution Committee, with F. P. Smith, Secretary of the company, as Secretary, for the following purposes, to assist by contributing machine guns and to encourage enlistment amongst the company's employees. At the inauguration meeting, it was announced that J. W. Norcross, Managing Director, and R. M. Wolvin, had each promised one machine gun.

Ontario Car Ferry Co.'s Car Ferry No. 2.—A preliminary trial trip of the Ontario Car Ferry Co.'s car ferry, Ontario No. 2, took place at Toronto, Aug. 28. This vessel, which is stated to be the largest yet built on Lake Ontario, is under construction by Polson Iron Works, Ltd., Toronto, and was fully described in Canadian Railway and Marine World for April, 1914.



# Marine Department

## The Grand Trunk Pacific Railway's Dry Dock at Prince Rupert, British Columbia.

The dry dock and ship repairing plant, which the G. T. P. R. has built at Prince Rupert, B. C., as a part of its railway and marine terminal facilities, was announced to be ready for business, Aug. 1. The selection and survey of the site was made in 1910, and the actual work of construction was commenced early in 1912. The dock is in three units, with a total lifting capacity of 20,000 tons. All the units are interchangeable, and each is complete in itself, with pumps and air compressors. The two end sections are each of 5,000 tons capacity, and the middle one of 10,000 tons capacity. When all three are joined, the dock will be capable of raising a vessel 600 ft. long of 20,000 tons.

The dock has an overall length of 604 ft. 4 ins. on the keel blocks, a clear width of 100 ft., and a width overall of 130 ft. The lifting power is the aggregate of 12 pontoons of timber construction, each 130 ft. long, corresponding to the width of the dock, 44 ft. wide in a direction corresponding to the length of the dock, and 15 ft. deep. These pontoons are united by steel side walls or wings 38 ft. high, 15 ft. wide at the bottom, and 10 ft. wide at the top, the walls being divided so that the whole structure may be used under ordinary conditions as three separate docks, one of 6 pontoons with an overall length of 269 ft., and two of 3 pontoons each, with an overall length of 164 ft. each. The machinery for pumping the dock consists of centrifugal pumps operated by electric motors, the capacity of the equipment being sufficient to pump the entire lifting power of the dock in two hours. The structure as a whole is secured to the shore by the engagement of clamps on the dock with a vertical truss secured to the pile platform or pier in such a way that it is free to rise and fall with the tide, and when being raised or lowered with the ship. The location of these attachments is such that when it is desired to use the dock in separate sections, the bow section may be detached and moved round the corner of the pier work located alongside the platform and secured in the same manner as provided in the original position. To make the other two sections available as separate docks it is only necessary to detach the middle section, comprising 6 pontoons, from the pier work and advance it the length of the detached section, when the sliding clamps upon the wings will coincide with those used for the previous section when the dock was operated as a whole. This will allow ample space between the centre and stern sections for the overhang without interference of vessels that may be docked in them.

The pumping machinery consists of 24 12 in. centrifugal pumps one in each end of each pontoon. They operate at approximately 275 r.p.m., being driven by a vertical shaft. All pumps on each side of each section are driven through gearing and horizontal shafting by one electric motor. Thus for the two smaller sections of three pontoons each there are four 100 h.p. motors, and for the larger section of 6 pontoons there are two 200 h. p. motors. These motors are of the alternating current, 3 phase, 25 cycle, 550 volt, with wound rotors and slip rings for variable speed control. The armature shaft is extended at both ends and operates the distri-

bution shafts through reduction gearing at approximately 275 r.p.m.

The power house has all the boilers and power plant required for the supply of all the electric current for the dry dock, shop equipment, compressed air plant and electric lighting equipment, under one roof, covering an area of 15,392 sq ft. There are six 400 h.p. water tube boilers with automatic stokers, chain grate type. The two main engines are of 900 h.p. each. The generators are 600 k.w., 3 phase, 25 cycle, 550 volt, alternating current, and two steam driven exciters, one of 50 k.w. and one of 25 k.w. capacity, direct current, 220 volts. There is also a motor driven exciter of 25 k.w. capacity, the motor for this being 35 h.p., 3 phase, 25 cycle, 550 volt alternating current, squirrel cage type. The air compressors have an air displacement of 1,580 cu. ft. of free air per minute, when operating at 150 revs., and are designed for a steam pressure of 175 lbs. a sq. in. and an air pressure of 100 lbs. a sq. in.

The boiler and blacksmith shop is 76 by 150 ft., the central part being 33 ft. wide, provided with a 15 ton travelling crane. The design is of the usual steel frame shop construction, with flooring of concrete, with complete and up to date tool equipment.

The machine shop is of similar design and built from the same plans as the boiler and blacksmith shop, the flooring also being of concrete with special foundations for heavy tools. The large tools are driven by individual motors, and the smaller tools are arranged for group driving. The building shed and woodworking shop are under one roof, and divided in two sections, the building shed being 86 by 300 ft. with a clear height under cranes of 50 ft. and under girders of 56 ft. The shop section is 80 by 300 ft., the ground floor being used for machinery and the upper floor for laving out. The office and administration building is 40 by 100 ft., of wood, 2½ stories high.

Complete details and plans of the dry dock and shops were given in Canadian Railway and Marine World for February, 1912.

**Furness Withy and Co.'s Report.** The report for the fiscal year ended Apr. 30, shows profits, including the amount brought forward from the previous year, of £806,195 19s. 1d. After charging directors' fees and income tax, there remains £784,876 17s. 3d., an increase of £32,927 7s. 8d. over the previous year. Three quarterly dividends at the rate of 10%, in addition to the usual half yearly preference dividend have been paid, leaving an available balance of £599,724 4s. 5d. Of this balance, £350,000 has been transferred to depreciation account, £15,000 to a superannuation fund just inaugurated, £10,000 divided among masters, officers and engineers of the fleet, in recognition of the extra strain and vigilance necessary during the war, £50,000 in payment of the fourth quarterly dividend at 10%, and £141,446 carried forward to the current year's accounts. The directors applied for £50,000 of the war loan issued in Nov. 1914, and have also applied for an additional £150,000 of the June loan. Subsidiary companies also applied for amounts in the war loans, making a total subscribed by Furness Withy and Co. and its subsidiaries, of £550,000.

## The Loss of the s.s. Cabot.

An enquiry was held at Sydney, N.S., recently, by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. R. MacDonald and A. J. Morrison, as nautical assessors, into the foundering of the Dominion Coal Co.'s s.s. Cabot, in the Strait of Northumberland, off Prince Edward Island, on June 24.

The master, Jas. Lintlop, stated that the Cabot was a schooner rigged, single screw, steam vessel of 162 net tons and 465 tons gross, capable of a speed of about 8 knots, about 8 years old, and was equipped with triple expansion engines, and drew 12 ft. forward, 11½ ft. aft, light, and 18½ ft. forward and 13 ft. aft when loaded. He left Charlottetown, P.E.I., on the morning of June 14, light, for Sydney, and was on deck practically all the time. The weather was clear with light winds. He rounded Point Prim, and shaped a course to pass Indian Reef, after which the course was altered to clear Bear Point, about 4 miles. At 6 p.m. fog came on at intervals and remained so up to the foundering of the vessel. He left port without filling tanks, as was customary in fine weather; but about 9 p.m. he gave orders to fill them, which was done with the help of the pumps. The vessel listed slightly, as she ordinarily did when that operation was performed, and came back on an even keel; but again listed, and as this was unusual the tanks were sounded, when it was seen that there was about 18 inches of water over no. 2 tank. The pumps were operated, but without avail, the vessel continuing to list. In view of this, he ordered the boat lowered, and called all hands on deck, the ship having a list of some 40 degrees when the crew got in the boat, the rail of the poop on the port side being nearly awash. He stated that whilst hanging on to the davit guy, which had been freshly painted that day, he was swung overboard, and that is the reason he found himself in the boat. Upon being recalled, he averred that when in the boat he found there was one man left aboard the ship, and he returned in the dory with three others to get him off. The ship sank about 11 p.m., and they kept the boat before the wind, and were finally picked up by a schooner, after about 12 hours adrift. Questioned as to a statement made by the second engineer, he said that to his knowledge there was no leak in no. 2 tank, nor were the pumps used every six hours to empty that tank. He positively asserted that the ship never touched bottom nor struck any object, and therefore, his theory was that in the head sea prevailing the vessel strained herself and started some rivets, gradually increasing the injury so that a considerable flow of water took place, and that it was due to that that the ship foundered.

The second officer stated that he held no certificate, but had considerable experience at sea. He had been on deck on watch from 12 to 4 and 6 to 8 the day of the foundering; but not on the bridge, as the captain kept his watch while he was busy about the decks. He noticed nothing unusual, that the weather thickened intermittently from 6 p.m. until he went below. Upon being called on deck he found the vessel had listed to a sharp angle, and he went in the boat with the others. He was positive the ship did not strike whilst he was on watch.

The chief engineer deposed that he joined



the ship in March last, that the machinery was in good order; that he was on watch from 6 p.m. until the ship foundered. When he noticed the ship taking an unusual list he sent the fireman to call the second engineer, the steam diminishing in the meantime. He came on deck without shutting the valve, knowing that the engine would stop on account of the diminution of the steam. It took from 1½ to 2 hours to fill the tanks, which held 32 tons of water. Questioned as to the water which remained in no. 2 tank, occasioning pumping, he was of opinion that it was due to the fact that some water must necessarily stay in the tanks as the pump did not reach so close to the floor, and again it might be due to some dirt impeding the efficient working of the valves, and the probabilities were that the pipe joining the peak tank might be leaking at the joint. Upon being recalled, he denied in toto the assertion of the second engineer that the no. 2 tank had to be pumped every six hours for five minutes, if not regularly at least frequently.

The second engineer stated that he holds a fourth class certificate, that he had been on the Cabot for seventeen months. In his opinion the ship was leaking somewhere in the vicinity of no. 2 tank, that frequently, or almost every six hours, the pumps were in action for five minutes on that tank. Questioned as to the amount of water which could be pumped in five minutes, he could not say off hand. He could throw no further light on the matter, and his statement was not considered extremely satisfactory, being refuted by the chief engineer, and also by his predecessor, who had been acting in that capacity for about two years prior to March. The master also denied that such was the case, and stated that if pumping had been done, he was absolutely ignorant of it.

The court having carefully weighed the evidence adduced, which proved unsatisfactory in every respect, confesses that it remains in the dark as to the actual causes which brought about this casualty. In reviewing the evidence of the master, though he navigated his vessel inside of Point Prim buoy, nothing indicates that the vessel grazed the reef, thereby weakening the hull under no. 2 tank, and if she had touched and injured that part of her hull it is evident she would have received more serious damage further aft, as she was down by the stern. The court has questioned his action upon seeing the ship filling, for not steering toward the land instead of keeping her head on to the sea. Though, in our point of view, such method would have been a preferable one to adopt, it was only as a tentative way of trying to place the ship in shallow water, but owing to the water invading the engine room, steam being low, no speed could have been attained, and therefore, in view of these circumstances, we cannot condemn the master for his action in this respect. We look with askance at the fact that he was not the last man to leave the ship; that the wheelman was left on board; even though he went back to his rescue. Owing to lack of other evidence, we are bound to accept his statement that he was swung overboard, and the davit guy slipped through his hand. It was providential that the boat happened to be handy. With regard to the second engineer's evidence, which was contradicted by three witnesses, we are compelled to term his statement as an exaggeration. We are aware that the tanks cannot be thoroughly emptied; that there is a sweeping process taking place within the ship; that leakages are bound to occur from connecting pipes, increasing gradually the volume of water. The ship had been thoroughly inspected in the spring, and a certificate

of seaworthiness given. No reports were ever made by anyone from the ship to the company as to defects. As no evidence was given to shed the least light on this matter, the court has to make its own conjectures, based on the nautical experience of each member of which it is composed. At some time during that voyage the vessel must have struck or grazed some submerged object, dislodging the heads of rivets, unknown to the crew; that no effects were seen till the vessel, encountering a head sea, increased the injury the ship had already sustained. This was accelerated by the fact that the tanks were empty, and were not filled until after the ship encountered the head seas which it was said were prevailing at the time. It appears that it was customary to leave port with the ballast tanks empty, this having been done by other masters who were previously in command of this vessel. While we condemn that system, we cannot say that it was the direct cause of the foundering, but it helped considerably, as had the tanks been full it would have served as a strengthening protection to the hull of the ship at moments of straining. Yet, if our theory is correct as to the possibilities of some rivets being loosened through unknown reasons, a leak would have sprung up later. For lack of contradiction of the evidence adduced as to the way the ship foundered, while we question the methods adopted, it is our present duty to allow the benefit of the doubt. With regard to leaving port without the tanks being filled, while the vessel had no cargo, we consider the method unseamanlike, especially owing to the peculiar construction of the vessel, and the time it took generally to fill the tanks, viz.: two hours. We cannot overlook this phase of the disaster, and as we have before stated that this contributed to the foundering, we shall be lenient in our dealings with the master, owing to the fact that it was a customary thing to do during the summer, and therefore suspend his certificate for three months from July 15.

#### Cruiser Sterns on Merchant Vessels.

C. H. Nicholson, Manager Grand Trunk Pacific Coast Steamship Co., Ltd., Vancouver, B.C., writes Canadian Railway and Marine World as follows:—"In your August number you quote from some New York shipping paper that 'the only correct cruiser sterns built on merchant vessels up to the present are the Canadian Pacific steamships Empress of Russia, Empress of Asia, Metagama, Missanabie and Princess Irene, and the Allan Line steamships Alsatian and Calgarian,' to which apparently you have added 'The C.P.R. Princess Margaret, a sister vessel of the Princess Irene, should be added to this list.'

"Knowing your desire that statements made in your paper should be correct, I beg to inform you that as far as my knowledge goes the first instances of cruiser sterns being installed in merchant vessels were on the Grand Trunk Pacific steamships Prince Rupert and Prince George, built by Swan, Hunter & Wigham Richardson, Ltd., Newcastle-on-Tyne, in 1910. The cruiser stern was adopted for our ships after exhaustive tank tests, with the result that the cruiser stern gave one half knot an hour more speed with the same power than the ordinary round stern, and as the results of these tests were made public I assume the other lines have seen the advantage and copied the idea from the Grand Trunk Pacific."

The New York Central Rd. is reported to have decided to build a reinforced concrete dock at Buffalo, N. Y., at a cost of \$30,000.

#### The Loss of the Canadian Northern s.s. Royal Edward.

The British Admiralty announced, Aug. 17, that the s. s. Royal Edward had been torpedoed and sunk by the Germans in the Aegean Sea towards the approach to the Dardanelles, Aug. 14, while transporting reinforcements for the troops engaged on the Gallipoli peninsula. The reports indicate that there were about 1,000 lives lost.

The Royal Edward, which had been operated on the Atlantic route, between Montreal, Quebec and Avonmouth, in the summer, and from St. John in the winter, by Canadian Northern Steamships Ltd. since the commencement of 1910, was requisitioned by the Admiralty in Nov. 1914, and was one of the vessels engaged in transporting the Canadian Expeditionary Force to England. After this service, she was used for some time as a prison vessel for interned Germans, until such time as other arrangements ashore could be made. Since then she has been engaged in various services, latterly in transporting troops to the Dardanelles, this being her second voyage.

She was formerly known as Cairo, was originally built for the Mediterranean trade, and with her sister vessel, Heliopolis, was acquired by Canadian Northern Steamships Ltd. in 1910. They were returned to the builders to have certain alterations made, which were considered necessary for Atlantic service, and their names changed to Royal Edward and Royal George, special permission having been obtained for the use of the word Royal. She was of steel, her length was 545 ft., breadth 60¼ ft., depth to shelter deck 38 ft., with the hull divided into 10 watertight compartments and with cellular double bottom from stem to stern. There were seven decks and the whole vessel was luxuriously equipped. The propelling machinery consisted of compound steam turbines supplied with steam by four double ended and four single ended boilers of the cylindrical return tube type.

Lieut. Wooten, R. N. R., who had been in command of the vessel since her acquisition by the C. N. S. Ltd., was on board as navigator, and, at the time of writing, his name has not appeared as one of the survivors.

**Toronto Harbor Contracts.** The Minister of Public Works, when in Toronto, Aug. 11, conferred with members of the Canadian Stewart Co., relative to complaints as to the quality of the work done under certain sub contracts in Toronto harbor. The Minister is reported to have stated that Government inspectors had failed to report deficiencies, such having been reported by the Chief Engineer of the Toronto Harbor Commission, who was well within his province in reporting. The defective work was not trifling, but was not so extensive as to be alarming. An investigation of the defective work is being made and the report will be submitted to the Department in due course.

**Jitney Ferries at Toronto.**—In order to cope with what is considered to constitute a danger, a clause was inserted in the Toronto city bylaws for regulating and licensing ferries, providing that no ferry boat not heretofore having received a license from the city shall hereafter be licensed unless its Government certificate entitle it to carry at least 300 passengers. During the discussion of the bylaws, the section quoted was dropped, and the bill passed without it. A considerable ferry business of the "jitney" type has grown up between Toronto and Toronto Island, small gasoline boats being utilized for the purpose.



## Shipping Letters From the Head of the Lakes.

F. and W. Jones, brokers, Fort William, Ont., have issued weekly letters as follows:

**July 31.**—Eight cargoes of coal were unloaded during the past week, six bituminous and two anthracite; four were in U.S. bottoms, and four in Canadian bottoms. One cargo of anthracite is now being unloaded; it is a U.S. bottom. Two Canadian steamers, both with bituminous coal, are reported en route, one goes to the C.N.R. dry dock and one to the Fort William coal dock. There has been no marked increase in shipments to the west, but they will undoubtedly pick up considerably in the near future, as dealers in the west will soon have to replenish stocks in view of winter's demands, and it is expected that this movement will start when cars are demanded in the west for the new grain crop. The taking over of the Lake Superior Branch of the G. T. Pacific Ry. and terminals by the Dominion Government has now become effectual, and two cargoes of coal have arrived, billed to the Canadian Government Railways. A U.S. steamer loaded a cargo of coal screenings (about 3,000 tons) at the Canadian Pacific dock this week; the cargo was billed to a Lake Michigan port. One cargo of ore was shipped this week in a Canadian steamer, and was consigned to Cleveland. No further charters are reported. Seven vessels have loaded cargoes of grain since last Monday, four of which were passenger vessels, all of these cargoes were billed to Canadian ports. The elevator stocks are reported as 3,394,147 bush. of all grains, thus showing only moderate decrease from last week's report. Arrivals from the west have been only moderate. The eastern shipments have totaled 1,412,174 bush. At this rate a steady depletion of stocks is evident, and very little grain will be held in elevators by the time new crop arrives. Weather conditions throughout the west have considerably modified, and are generally considered satisfactory for harvesting. Reports to hand denote a moderate percentage of damaged crops, which will probably have the effect of reducing the Government grading of a portion of the crop. This, however, will in no way effect the total crop results. It is understood that exporters have already commenced figuring on a volume available for export beyond any previous records. Harvesting will commence early in August, and is expected to become general throughout the west by the 20th. In view of this, railway companies have already lined up their car supplies at easily available western points.

Stocks on hand, receipts, and shipments during the week:

	Stocks.	Receipts.	Shipments.
Wheat .....	1,667,472	624,797	998,443
Oats .....	476,427	265,080	369,891
Barley .....	44,306	28,844	27,620
Flax .....	1,205,942	28,115	16,215

**Aug. 7.**—Coal arrivals show a slight falling off during the first week of August, only six cargoes arriving, as against eight in the last week of July; five of them were bituminous, and one anthracite. Three were carried in U.S. bottoms, and three in Canadian. One steamer with anthracite coal is waiting turn, and four are reported en route, all with bituminous coal. There is no change in the western coal situation. Car shipments are still very light, and no big movement is looked for until the grain begins to move down to these ports freely. No ore was shipped east this week. One charter is reported to load during the early part of next week, probably for Cleveland. There will likely be another load the end of next week or early the week later, but no definite charter is reported. Seven ves-

sels have loaded grain cargoes during the week, all of which were billed to Canadian ports. This is the second week in succession which has been marked by an absence of U.S. billing. The total amount shipped east is reported as 862,670 bush., and shows a considerable decrease on the past several weeks. Elevator stocks at the two ports stand at 3,124,271 bush. of all grains, and show a slight steady decrease. Receipts from the west are also steadily declining. There appears to be no disposition on the part of shippers to make any great movement with the balance of old stocks, all attention is directed to the prospects of the new crop, and in consequence enquiry for lake space is weak and uninteresting. The week under review opened up with most favorable weather conditions all through the western provinces; later, however, there was more or less unsettled conditions, followed with rain and slight frost in Saskatchewan. This has by no means affected the optimistic feeling among grain men; a full crop is considered as now assured, whilst it is conceded that there will probably be a percentage of low-grade grain in consequence of the unsettled weather conditions. Harvesting will be in progress generally throughout the west by the 20th of the month. During the coming week harvesters' trains are scheduled to arrive from the east carrying all available help for the various western centres, and whilst help will not be in excess, there is not expected to be any lack of harvesters. The new crop movement is now expected to be well on its way early in September.

Stocks on hand at date, receipts and shipments during the week:

	Stocks.	Receipts.	Shipments.
Wheat .....	1,363,817	372,777	676,431
Oats .....	504,998	151,296	122,825
Barley .....	63,051	46,519	28,734
Flax .....	1,194,455	13,653	25,180

**Aug. 14.**—Coal receipts brightened up during the second week of August. 9 cargoes were unloaded, as against 7 last week, 7 of these were bituminous and two anthracite. Four were carried in Canadian steamships and five in U. S. Two steamships are reported as en route, one anthracite and one bituminous. The western coal situation is practically unaltered, the only change being an increase in the shipment of steam coal, which is used in harvesting. As the harvesting becomes more general the shipments will become heavier and will naturally decrease the stocks of bituminous coal at the head of the lakes. Two cargoes of ore were shipped east during the week, one to Cleveland, the other to Cleveland and Buffalo. They totaled about 8,000 tons. No further charters are reported.

Eleven vessels have loaded grain during the past week, two of which were billed to Buffalo and were U. S. bottoms. The total amount reported as shipped east was 1,062,611 bush. of all grains, being a considerable increase over last week's shipments. Receipts from the west continue to show steady decline, only 276,744 bush. having arrived during the week. Elevator stocks are in consequence becoming materially depleted, only 2,340,739 bush. being reported as held in store at time of writing. All reports arriving of the crop prospects are most optimistic and it is confidently felt that a bumper harvest is assured. Weather conditions have been most favorable, universally warm throughout the west accompanied with only moderate rain fall. Commencement of harvesting is placed at from Aug. 19 to 21, according to districts, but will be general throughout the provinces by the latter date. Large quantities of machinery

and general supplies are being rushed forward in anticipation, it is also estimated that ample help is now in sight. General movement of the crop to the head of the lakes should be in progress early in September. Market prices continue firm and it is expected that farmers will market their crop at good prices, and a wave of prosperity is looked for in the west, which should put things generally on a most satisfactory basis. Stocks on hand at date, receipts and shipments during the week:

	Stocks.	Receipts.	Shipments.
Wheat .....	616,606	168,073	915,284
Oats .....	490,535	82,942	97,405
Barley .....	36,771	16,155	42,760
Flax .....	1,196,827	9,574	7,162

## Canadian Pacific Ocean Services, Ltd.

The announcement of the incorporation of Canadian Pacific Ocean Services Ltd. has already been made in Canadian Railway and Marine World. The company has an authorized capital of £2,000,000, and has power to acquire and operate ocean steamships, and to interchange traffic with railways. The company is subsidiary to the C. P. R., and the latter's charter has been extended to enable it to hold stock and securities of the new company, and to guarantee payment of principal and interest of such securities as may be issued with the consent of C. P. R. shareholders. Canadian Pacific Ocean Services Ltd. will take over the C. P. R. interest in all steamships engaged in ocean traffic and also those of the Allan Line Steamship Co., which has been under C. P. R. control for some time. A moderate estimate of the value of the steamship property involved in the transaction, after making due allowance for depreciation, is \$23,500,000. It is proposed that in consideration for the steamships and appurtenances acquired from the C. P. R., and for the capital stock of the Allan Line Steamship Co., carrying with it all the company's steamships and other properties, the C. P. R. shall accept the fully paid capital stock of the Canadian Pacific Ocean Service Ltd., viz., £1,962,910, being all the shares except those necessary for directors' qualifications, and in addition shall accept 5% debentures, first debentures or debenture stock of the steamship company for £2,865,860.

The s.s. *Midland Queen*, owned by Canada Steamship Lines, Ltd., and under charter to the Dominion Iron and Steel Co., was torpedoed by the Germans, Aug. 3, while en route to Newport, Monmouth, Eng. She was built at Dundee, Scotland, in 1901, and was a steel vessel equipped with triple expansion engines with cylinders 18 x 30 x 50 x 36 ins., supplied with steam by 2 Scotch boilers at 170 lbs. pressure. Her dimensions were, length 249 ft., breadth 42 ft. 7 ins., depth 20 ft. 6 ins.; tonnage, 1,993 gross. 1,349 register. She was formerly owned by the Midland Transportation Co., Midland, Ont., which was absorbed by Inland Lines, Ltd., which in turn was absorbed by Canada Steamship Lines, Ltd.

The special crew which were engaged last April, at Halifax, N. S., to take the ice breaking steam tug J. T. Horne, to Archangel, Russia, returned to Halifax at the end of July. They report that the icebreaking s. s. *Canada* (formerly *Earl Grey*) has done good work in the harbor at Archangel, but broke down and had to be sent to England for repair. She is again in service.

Navigation on the Rideau River this summer has been seriously interfered with owing to low water. The *Rideau Queen*, which was running on the route has been taken off on this account.



### Grounding of the s.s. Haddington.

A formal investigation into the grounding of the Canada Steamship Lines s.s. Haddington on the eastern reef of Red Island, in the River St. Lawrence, June 4, was held at Kingston, Ont., recently by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. T. O'Connor and Jas. Murray, as nautical assessors. The chief witness, Joseph Blais, who was in charge of the Haddington at the time of the casualty, as sailing master, although summoned by his principals on instructions from the Wreck Commissioner, did not appear.

It appeared from the evidence that the master, R. J. Wilson, holds a master's certificate for inland waters, and a mate's certificate for coasting waters, and owing to his lack of qualifications as master coasting, his owners engaged, through the representatives of the Anticosti Island Agency, a man named Joseph Blais, holding a certificate in the coasting trade, who was signed on the articles as sailing master. The Haddington was loaded with 1,908 tons of coal, and was bound from Ashtabula to Gaspé. After passing Cape Salmon, the master left the deck, giving instructions that he be called if the weather became thick. The weather was then perfectly clear and calm. He was later awakened by a shock, and immediately went on the bridge, the vessel having stopped in the meantime by order of the officer on the watch. The sailing master appeared excited, and gave as a reason for the grounding the excuse that he thought he had allowed sufficient in shaping his course to clear the reef. It being flood tide, the vessel floated off, and when soundings were taken it was found that no. 1 hold was filling rapidly, and later no. 3 was found to be leaking. The officer of the watch and wheelman gave corroborative evidence, and the court, considering that sufficient had been submitted, adjourned sine die in the hope that the sailing master would put in an appearance. As, however, no word had been received from him, the court gave judgment as follows, on July 23:

The master and his officers were strangers in the River St. Lawrence below Quebec, and the owners of the Haddington, in order to relieve them of the responsibility of navigating the ship, on the recommendation of the Anticosti Island Agency, accepted the services of a man fully qualified in so far as he possessed a proper certificate, to assume the navigation of the ship into the Gulf, and such being the case, we are of opinion that the master, in view of the exceptionally fine weather prevailing,

was within his rights in securing as much rest as possible in order to be in a fit state to take charge in case of emergency, having left proper orders before leaving the bridge. The first officer, also a stranger in that locality, depended altogether upon the so-called pilot and there was nothing to cause him to be suspicious of the efficiency of the pilot and the effectiveness of the courses given. Everything being in full sight, there was no cause for interference or remarks on his part. Therefore, for the foregoing reasons, we hold that neither the master nor the first officer in charge are to blame for this casualty, and exonerate them from blame. With regard to the sailing master, whose evidence has not been heard, but who was undoubtedly in full command at the time of the stranding, we hold that in view of the strong flood tide running at the time, he did not allow sufficient margin for the effect of such tide on his vessel. This in itself is considered an error of judgment. Had it happened in misty weather, when objects are indistinct, this court would have been inclined simply to censure him, but in this case, objects were visible plainly, but evidently bearings do not seem to have been taken, and estimation of distances were neglected. In view of this we are of opinion that proper seamanship and good judgment were not exercised, and therefore suspend the master's certificate of Joseph Blais, sailing master of the Haddington, for four months; for his contempt of court he is liable to imprisonment, but the court will use the power which it has under statute, and further suspend his master's certificate for two months, which in all precludes him from navigating a vessel as master or officer of any grade from July 8, 1915, to Jan. 8, 1916. By this finding we hope to cause all those who may be called upon to appear before the Wreck Commissioner's court at a specified date, to obey the summons, whether given directly under the hand and seal of the Wreck Commissioner or through the principals, or agents, or owners of vessels, casualties to which are being investigated.

**Port Dalhousie-Toronto Car Ferry.**—With reference to the Canadian Northern Ry.'s intention to establish a car ferry service between the Niagara, St. Catharines & Toronto Ry.'s Lake Ontario terminus at Port Dalhousie and Toronto, we are advised that nothing will be done before the autumn. The C.N.R. was in negotiation with the C.P.R. for one of the car ferries used formerly between Windsor and Detroit, and also in regard to some other car ferries, but no purchase has been made.

### Quebec Harbor Commissioners Report for 1914.

The report for 1914 covers the work accomplished during the year in connection with the general improvement of the harbor facilities. The new administration building on Point a Carcy wharf was completed and occupied. The revenue was \$287,194.39, an increase of \$54,859.66 over 1913, and the expenditure chargeable to revenue was \$267,835.54, leaving a surplus of \$19,358.85. There is included in the revenue a charge of \$50,000 against the Dominion Government for building used by the Immigration Department. The expenditure on capital account on approved estimates out of advances made by the Government was \$1,994,960.03, and out of money at the Commissioners' disposal, \$17,341, making a total capital expenditure of \$2,012,301.03. The increase of railway traffic in the port necessitated the purchase of an additional switching locomotive. During the year, 53,907 cars were handled, of which the car ferry handled 18,485. The immigration and ocean passenger traffic required 5,560 passenger and baggage cars. The number of vessels arriving and departing from the dock was, inward 387, of 1,569,426 register tons; outward, 131 of 692,649 register tons. The grain handled at no. 2 elevator was, oats 531,815 bush.; wheat 43,233 bush.; corn 179,080 bush.; barley 12,000 bush., a total of 766,128 bush. Of a total of 98,834 passengers landed at Quebec during the year, 7,819 were first class, 35,407 second, and 55,608 third class.

The shed space available for ocean vessels is 5,000 ft. long, averaging 91 ft. wide. The river remained clear of ice until Dec. 9, by which time vessels were in their winter quarters.

**U. S. Marine Policy and U. S. Shipping on the Great Lakes.**—A Chicago vessel owner in commenting on the Seaman's Act, which comes into force in the U. S., Nov. 4, writes to the press, partly as follows,—"Unless the seaman's bill is modified the Great Lakes lines are practically forced out of business after Nov. 4. We have built up the finest passenger and packet freight service in the U. S., all tending to maintain lower railway rates, only to see the service annihilated or handed over to Canada, by Senate bill 136. Our most substantial point of opposition to this bill is that it fails to discriminate between, for example, a Great Lakes excursion steamer, always in sight of land, travelling in shallow water, and with passing ships invariably in sight, and the seagoing liners travelling from New York to Bombay."

### List of Steam Vessels Registered in Canada During July, 1915.

No.	Name	Port of Registry	Where and When Built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Engines, Etc.	Owner or Managing Owner
134-40	Ebess	Chatham, N.B.	Chatham, N. B.	1915	62 4	16 3	7 0	63	16 sc..	F. M. Tweedie, Chatham, N.B.
134-41	Greenville	Ottawa, Ont.	Toronto.	1915	155 0	30 9	10 9	497	232 75 sc..	Minister of Marine and Fisheries, Ottawa
134-409	Island	Quebec, Que.	Middlesbrough, Eng.	1914	120 0	26 0	13 2	287	124 159 sc..	Quebec Harbor Commissioners, Quebec, Que.
134-40	Q. H. C. Dredge No. 2.	Quebec, Que.	Renfrew, Scotland	1914	152 0	34 1	11 8	520	264 54 sc..	Quebec Harbor Commissioners, Quebec, Que.

### List of Sailing Vessels and Barges Registered in Canada During July, 1915.

No.	Name	Port of Registry	Rig	Where and When Built	Length	Breadth	Depth	Reg. Tons	Owner or Managing Owner
134-40	Dredge Primrose	Midland, Ont.	Dredge	Welland, Ont. 1915	136 5	42 0	10 1	767	Canadian Dredging Co., Midland, Ont.
137-92	H. L. Friolet	Chatham, N.B.	Schr.	Caracquet, N.B. 1915	36 0	12 0	4 7	10	H. L. Friolet, Caracquet, N. B.
134-40	N. gad	St. John, N.B.	"	Orland, Me. 1876	105 5	28 1	8 7	199	Bathurst Lumber Co., Bathurst, N. B.
137-75	Sunny Day	Lunenburg, N.S.	"	West Dover, N.S. 1915	38 4	10 5	5 4	11	D. Publicover, M. O., West Dover, N. S.



## Repair Work, Etc., in Shipbuilding Yards.

The following information has been supplied in response to our enquiries:

**Davis Dry Dock Co., Kingston, Ont.**—The present season is quieter than usual, partly due to war conditions and the removal of several boats from the lakes, and also to the careful navigating by the masters of boats on account of the extraordinarily low water level. Not since 1895 has the water been as low as during this season, and, while it has remained at practically the one level since the opening of navigation in 1915, it would seem as though there was little possibility of it receding to any great extent. This may be noted as a very good indication that the water has reached its low level, and there is a possibility that in the spring of 1916 vesselmen will note somewhat of a rise in it. Repairs in our dry dock during June and July were as follows: Steamboat Hinckley, owned by Hinckley-Cornwall Forwarding Co., Alexandria Bay, N.Y. Steamboat T. J. Waffle, owned by Capt. A. Foster and W. J. Waffle, Smiths Falls, Ont., repairs to stem, damage caused by running into lock sill. Docking of steamboat New Castanet, of Alexandria Bay, which ran on a shoal opposite Alexandria Bay, breaking her wheel and shaft; no serious damages, further than this. Steam barge Isabella H., owned by Hinckley-Cornwall Forwarding Co., Alexandria Bay, N.Y., slight repairs. Motor boat Kalolah, owned by Dr. Nichols, New York. Motor cruiser Aurora II., owned by Dr. J. J. Harty, Kingston. The latter two docked for cleaning and painting of hulls. Sailing scow Granger, owned by Capt. La Rush of Kingston, docked for installation of auxiliary 10 h.p. engine.

**Western Dry Dock and Shipbuilding Co., Ltd., Port Arthur, Ont.**—During the past month we have docked for extensive bottom repairs the s.s. Paliki of the Algoma Central Steamship Line, and the s.s. Glenfinnan of the Great Lakes Transportation Co. These were both fair sized jobs and have required approximately the last month to complete. The prospects for new work appear very poor at present, and the same holds good in regard to repair work, owing to the fact that so many of the lake boats have been removed to the Atlantic coast. The shipyard department is very quiet, but we are keeping our shops busy manufacturing shells for the government, and also are manufacturing light farm tractors."

**Yarrows, Limited, Victoria, B. C., July 6 to August 6:**—s. s. Princess Adelaide, docked, cleaned and painted; old propeller blade removed and a new spare one fitted; zincs renewed and engine room copper pipes repaired. s. s. Princess Sophia, docked, cleaned and painted; new propeller blade fitted; zincs renewed. s. s. Princess Victoria, made and supplied 4 new boat davits. Sir John Jackson Ltd. tug no. 10, docked, new cast iron propeller made and fitted; copper sheathing on keel renewed. Lobnitz Rock Breaker no. 1, docked, cleaned and painted; machinery overhauled and hull repaired. Dredge Mudlark, docked, cleaned and painted; machinery overhauled and hull repaired. Yacht Nooya, docked, cleaned and painted; new propeller shafting installed with reversible blades. s. s. Llandudno, docked on Government drydock, cleaned and painted; tail shaft drawn; stern tube rewooded; rudder pintles trued up and gudgeons rebushed. s. s. Leebro, docked, cleaned and painted and general deck and engine repairs. Barge Baroda, extensive repairs and alterations for converting her into coal carrying barge. s. s. Queen City, docked, cleaned and painted; boiler repairs. Sundry work and supplies for Naval Yard.

## Stranding of the s.s. Henry B. Hall.

An investigation into the causes of the stranding of the George Hall Coal Co.'s s.s. Henry B. Hall, near the Stone Pillars in the St. Lawrence River, June 10, was held at Montreal recently, by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. F. Nash and J. C. Cain as nautical assessors.

The master, D. H. Kiah, stated that the vessel is registered in the United States, and had a crew of 17, including two certificated officers, with United States licenses. On leaving Quebec, a licensed tour de role pilot, Lucien Lachance, was engaged to pilot the vessel to St. Simeon and back to Quebec, and being instructed by his agents that the pilot was taking charge, he left the navigation of the vessel entirely in the pilot's hands, he and the other officers being practically strangers to these waters. On the night in question the weather was calm, but slightly smoky, though objects could be seen plainly for four miles. Carrying the impression that the pilot had full charge, he felt relieved of all responsibility, and remained in his room. The pilot did not make enquiries as to the error of the compass, nor as to the peculiarities of the vessel. The compass was practically correct, but the one on the bridge was not used, and therefore he did not know of any error existing. When he felt the vessel bump he went to the bridge and found it was the last of the ebb tide, and that an order for full speed astern had been given and countermanded. With the rise of the tide the vessel was floated off in about half an hour. No observations were taken to ascertain the exact position of the grounding, but soundings were taken.

In response to the court, the master said that he was told the pilot was in charge, and naturally felt that he was not interested in the navigation of the vessel in waters to which he was a stranger. He had been sailing as master on the Great Lakes for about ten years.

The second officer, J. E. Norman, stated that the pilot was sober and awake, or apparently so. It being practically clear weather, he steered by the lights without regard to courses.

The following judgment was delivered:

The court, having carefully considered the evidence adduced, cannot help stating that it is absolutely disgusted with the

manner in which this vessel was piloted and navigated. This is not the first case which the court has been called upon to adjudge, where the evidence has shown a most disgraceful disregard of responsibilities. A light is seen, and it is at once accepted as being the one sought for, and courses are either altered or maintained, as the case may be, without first assuring themselves of the position and exact nature of the light. There is not even a half system adopted of steering courses and taking bearings, but the ship is steered in any manner, very erratically, until it fetches bottom and meets with disaster, and it is realized that a mistake has been made. It has been the policy of this court, in the past, to temper justice with mercy, and allow some margin in a generous degree to faults and errors of judgment which human nature is heir to, and also to the numerous responsibilities which a ship master and a pilot have to shoulder; but in the face of such glaring, culpable misconception of the duties incumbent on the pilot, especially knowing that he, owing to the absence of the master and officer of the ship from the deck, was bearing the full responsibility of the navigation of this vessel. Hence, we emphatically declare that in this case there has been no error of judgment, nor is there anything in the evidence, which has been carefully reviewed, that indicates the least idea of adopting safe measures was ever entertained by the pilot. The reputation of the St. Lawrence has, for many years been attacked, due to the laxity of some of the pilots in giving ordinary attention to their duties. The River and Gulf of St. Lawrence are beautifully lighted, and when the weather is clear, or nearly clear, there is no reason whatever for such casualties occurring. As already stated, this court has always been inclined to leniency, but owing to the frequency of such inexcusable conduct, it wishes that it be recorded far and wide that the utmost severity will be exercised henceforth, and we trust by this announcement that those who are invested with responsibilities and accept same will exercise the caution and precaution which it demands. We have dealt leniently with a former case of a similar nature, and though in this instance the ship suffered no apparent injury and little delay, we declare that the evidence shows that Lucien Lachance was neglectful in exercising the functions of a pilot, and his

## Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during July.

ARTICLES		CANADIAN CANAL	U. S. CANAL	TOTAL
Copper.....	Eastbound	Short tons 2,417	17,601	20,018
Grain.....	"	Bushels 1,548,861	849,801	2,398,662
Building stone.....	"	Short tons		
Flour.....	"	Barrels 226,700	539,090	765,790
Iron ore.....	"	Short tons 333,866	6,691,285	7,025,151
Pig iron.....	"			
Lumber.....	"	M. ft. b.m. 6,454	74,004	80,458
Wheat.....	"	Bushels 1,778,218	2,160,148	3,938,366
General merchandise.....	"	Short tons 11,353	26,316	37,669
Passengers.....	"	Number 3,986	3,819	7,804
Coal, hard.....	Westbound	Short tons 4,018	311,356	315,374
Coal, soft.....	"	" 48,700	1,710,478	1,759,178
Flour.....	"	Barrels		
Grain.....	"	Bushels		
Manufactured iron.....	"	Short tons 659	19,731	20,390
Iron ore.....	"			
Salt.....	"	Barrels 2,940	62,293	65,233
General merchandise.....	"	Short tons 31,919	116,015	147,934
Passengers.....	"	Number 3,581	4,010	7,591
Summary.....				
Vessel passages.....	Number	507	2,464	2,971
Registered tonnage.....	Net	919,753	6,788,870	7,708,623
Freight—Eastbound.....	Short tons	466,728	6,999,869	7,466,597
—Westbound.....	"	85,716	2,166,994	2,252,710
Total freight.....		552,444	9,166,863	9,719,307



contempt of this court's orders to be present indicates a lack of mentality. Moreover, having at heart the good name and fame of the St. Lawrence, and with a view to preventing reflection being cast on the reputation of the qualified members of the Corporation of Pilots, in fairness to them, and for the other reasons as stated above, we suspend the license of Lucien Lachance for one year from this date. We reiterate that in all future cases of a similar nature no mercy will be shown, and a cancellation of the license will be the result and decision.

With respect to the master and second officer, they being U. S. citizens, this court cannot deal with them, but for their benefit, as well as others, we will state that we are simply astounded at the lack of interest shown as to their responsibilities. Knowing that their vessel was chartered for the season to ply in the same waters, one would naturally suppose that they would familiarize themselves somewhat with the names of the lights, courses, etc. If, as *Chiah* stated, he was informed that the pilot would take charge, some excuse can be formed for him, and a degree of blame attached to the officer who made such statement and led the master into a false sense of security. We will abstain from reprimanding the master or officer, or censuring their conduct, in view of the circumstances, but we maintain that it is their own duty, for their information and security, to check the various courses which the pilot gives, by bearings and reference to the chart.

### Atlantic and Pacific Ocean Marine.

The Canada Steamship Lines s.s. *Parima*, operating on the New York-West Indies service, was damaged by fire at New York, July 29.

The White Star-Dominion Line steamships *Megantic* and *Northland*, which have been operating on the St. Lawrence route, have been taken over by the British Admiralty.

The s.s. *Jacona*, which was torpedoed by the Germans recently, was formerly the *Bellona*, and was owned by the Thomson Line and operated in the Canadian trade.

The Norwegian steamship *Fimreite*, under charter to the Nova Scotia Steel and Coal Co., was torpedoed recently, when one day out from Swansea, Wales, for Wabana, Newfoundland, with ore.

Pickford and Black are reported to have secured the steamships *Atlantis* and *Jose* for their service with Cuba and Jamaica, the former being due at St. John early in September, and the latter towards the end of the month.

The British s.s. *Romney*, which was damaged through stranding on Green Island reef in the St. Lawrence River, June 24, left the Davie Shipbuilding and Repairing Co.'s dock at Levis, Aug. 1, and proceeded to Montreal.

The s.s. *Easington*, owned by Furness, Withy & Co., and engaged in the Canadian trade, is reported sold to British buyers for about £24,000. She was built at Newcastle, England, in 1907, and is 1,387 tons gross, 863 register, with deadweight capacity of 2,100 tons.

The recently built s.s. *Aitearoa*, owned by the Union Steamship Co. of New Zealand, which was launched at Glasgow, Scotland, June 20, for service between Australia, New Zealand and Canada, has been taken over by the British Admiralty, and is announced to have been renamed *Avenger*.

Furness, Withy & Co. are reported to have purchased the s.s. *Lord Lonsdale* for £85,-

000, and to have renamed her *Annapolis*. She is 4,567 tons gross, 2,895 register, with 7,500 tons deadweight capacity, built on the Isherwood system at Glasgow, Scotland, in 1911. She has a speed of 11½ knots.

The Ulster Steamship Co. (Head Line) s.s. *Bengore Head* and the Dominion Coal Co.'s s.s. *Batiscan* collided Aug. 1, near Hare Island, about 81 miles below Quebec. The *Batiscan*, although damaged about the bow, proceeded on her trip to Montreal, while the *Bengore Head*, as she was making considerable water in no. 2 hold, was beached.

The s.s. *Huntress*, which is being operated under special charter from the British Government, by the Peninsular and Oriental Navigation Co., and which was at Montreal early in August, was formerly a German vessel, owned by the Hamburg American Line, and named *Frisian*. She is of 10,000 gross tons, and was on her maiden trip when captured by Great Britain.

The Mayor and corporation of the city of Quebec, together with representatives of the transportation and business interests, welcomed the captain of the American-Hawaii Steamship Co.'s s.s. *Missourian*, and presented the vessel with a silver cup, Aug. 3, on the first visit of the vessel to the port. The *Missourian*, which is now engaged in transporting horses to France for war service, was the first cargo vessel to pass through the Panama Canal.

In connection with the recent reports that the Pacific Mail Steamship Co., operating in the trans-Pacific trade out of San Francisco, is to abandon its business on the coming into force of the Seamen's Act in November, P. Manson, General Manager of the Atlantic Coast line, who recently returned from a trip to the Orient, is reported to have stated that the company will not go out of business, and that there is no chance that the company will sell out.

The Pacific Mail Steamship Co. is reported to have sold five of its vessels, viz.,—China, Korea, Manchuria, Mongolia and Siberia, to the Atlantic Transport Co. of West Virginia, a subsidiary of the International Mercantile Marine Co. It has been reported, denied and reiterated that the company will go out of business on the coming into force in November, of the Seaman's Act, which, it is claimed, will militate against the paying operation of U. S. owned steamships in cross ocean traffic.

The Marine Transportation Service Corporation has been incorporated in New York with \$1,000,000 capital, to operate steamships from New York to California and Puget Sound ports, via the Panama Canal, and also to South American ports. It was announced that the Pacific Coast Line would be inaugurated during August with the sailing of the s.s. *Eureka* from New York, and that six vessels would be utilized in the service. The General Manager of the company is G. J. Hammell, New York.

The Osaka Shosen Kaisha s.s. *Hawaii Maru* was expected to arrive at Victoria, B.C., Aug. 31, on her maiden trip from Japan, direct from Yokohama. It was originally announced that she would call at Hong Kong, China, but owing to delays with the builders, the call was dropped from the schedule for the initial trip. At her trials, over a measured course, she developed 16.8 knots, and was expected to complete the run from Yokohama in 13 days. The s.s. *Manila Maru* will not be ready for service until September, and is expected to arrive at Victoria about Nov. 9.

A final disposition of the s.s. *Dacia* was made in the French courts Aug. 4,

when it was declared that the vessel was a legal prize, and the seizure perfectly valid. It will be remembered that the s.s. *Dacia* was acquired from the Hamburg-America line by a United States citizen of German descent, with the object of shipping freight to Germany. This so-called sale was declared by Great Britain not to be in accordance with the international rules, which do not recognize the transfer of vessels belonging to belligerents during war. Great Britain also announced that the *Dacia* would be considered as open to capture as a German vessel if she came into the open sea. Her dispatch from the United States port was considerably delayed while the matter was being debated, but the British attitude remained unaltered. The vessel eventually sailed with a cargo of cotton, and was captured by a French vessel and dealt with by the prize court there.

### Maritime Provinces and Newfoundland.

The name of the steamboat *Isaac N. Veasey*, no. 116,742, registered at Halifax, N.S., as owned by C. A. Larder, New Ross, N.S., has been changed to *La Have*.

An order in council has been issued amending the Halifax, N.S., pilotage district bylaws to provide that the amount payable to a pilot on superannuation shall be increased from \$500 to \$600 a year.

The icebreaking steamship *Bruce*, which the Russian Government purchased from the Reid Newfoundland Co. recently for ice-breaking services in the port of Archangel, arrived there Aug. 23.

The steamboat *Premier*, which was wrecked about a year ago, when running from St. John, N.B., to Nelson, N.B., where she was to be operated as a ferry, has been purchased by T. McCoy, St. John, who is having her overhauled for operation on the St. John River for general purposes.

The Newfoundland sealing vessel *Nep-tune*, which was used in the Scott expedition to the far north about two years ago, has been sold to a moving picture company for an expedition to the Arctic regions. She was built at Dundee, Scotland, in 1872, and is 684 gross tons.

Canada Steamship Lines s.s. *Kenora*, which for the past few weeks has been engaged in the coasting trade, was reported to be fast ashore at Low Point, in the harbor entrance at Sydney, N.S., August 5. She was driven ashore during a heavy gale, and is reported to be considerably damaged.

We are officially advised that the Canada Atlantic and Plant Steamship Co. has discontinued a portion of its service calling at Hawkesbury, N.S., and Charlottetown, P.E.I., for the present, owing to small tourist travel, but will probably resume it in September, if autumn business warrants it. The service between Halifax, N.S., and Boston, Mass., continues as heretofore.

A proclamation has been issued declaring Dipper Harbor, N.B., to be a port to which part XII. of the Canada Shipping Act shall apply. The harbor includes all the waters of the Bay of Fundy inside a line of 20 fathoms at low water, and between lines due north and south through points one nautical mile due east and west respectively, of the lighthouse on Campbell Island, in the entrance to Dipper Harbor.

Reference was made in Canadian Railway and Marine World for August, to a contract having been made by the Prince Edward Island Government for the operation of the s.s. *Senlac* on a service between the Island and the main land, for the remainder of the year. It should have



stated that the contract was made by the Department of Trade and Commerce of the Dominion Government, and not by the Prince Edward Island Government.

The Myrtle Leaf Navigation Co., Ltd., has been incorporated under the Dominion Companies Act, with \$64,000 capital and office at Apple River, N.S., to take over the schooner named Myrtle Leaf, to own and operate steam and other vessels, and to carry on a general navigation business. The incorporators are M. G. and E. A. White, Sussex, N.B.; G. W. Smith and E. Wasson, Apple River, N.S.; E. K. Merriam, Port Greville, N.S.

F. P. Gutelius, General Manager, Canadian Government Railways, when in St. John, N. B., early in August, is reported to have stated that a number of improvements will be undertaken in the harbor, as soon as the financial situation improves. These improvements will include the construction of two new piers, each 750 ft. long, and the replacing of the grain elevator which was destroyed by fire some time ago. The elevator will not be built on the old site, as it has been decided to use that for other purposes.

The steamboat Avonlea, operated on the ferry service across the Mira River at Mira Gut, N.S., was removed from the service at the end of July, owing, it is stated, to the objection that the engineer in charge was not a duly qualified man. The owners stated that the regular engineer had left on account of ill health, and a thoroughly competent man was in charge, but he had no certificate. No qualified engineer was available in the vicinity, and the income from the traffic, even together with the subsidy, was insufficient to cover the cost of engaging expensive outside assistance.

A New York shipping paper purports to give some information of certain changes in shipping routes regarding Canadian vessels, which, to say the least of it, is very misleading. It states: "The gradual withdrawal of trans-Atlantic steamers from St. John's because of the transport needs of the British Admiralty and the requirements of British trade has reached a point where only three small steamers are now plying between St. John's and Liverpool." It is evident that when mentioning St. John's, it is St. John, N.B., that is meant; St. John's is in Newfoundland. It may be taken from this that the only steamship service which is being operated between Canada and Great Britain at present is that between St. John and Liverpool, consisting of three small vessels, with no passenger accommodation. For main trans-Atlantic services, St. John has been for many years used as a winter port only, the summer traffic coming up the St. Lawrence to Quebec and Montreal. It also states that the Allan Line service which has been carried on for nearly fifty years between St. John, Halifax, Philadelphia and Glasgow, has been discontinued, and the vessels so engaged transferred to the service between Montreal and British ports. No doubt, when the St. Lawrence navigation season closes, these vessels will use the winter ports as heretofore.

### Province of Quebec Marine.

The s.s. Prefontaine, owned by J. Malo, Montreal, was driven ashore at Port Platon, near Quebec, August 4.

The depth in the Montreal harbor at Aug. 12, was 29 ft. 7 ins., a decrease of 3 ft. since April and of 2 ft. since May. The depth of water at Aug. 12, 1914 was 30 ft.

The Montreal Harbor Commissioners have completed the forming of a new river chan-

nel in the neighborhood in St. Helen's Island, with the object of lessening the current outside the harbor proper.

The Dominion Government s. s. Montcalm returned to Quebec, Aug. 10, after a month of touring the various lighthouse stations in the Gulf of St. Lawrence with provisions, etc.

The Imperial Oil Co. is arranging with the Quebec Harbor Commissioners for the construction of oil storage tanks on a portion of the Commissioners' property, with the view of facilitating the supply of oil to ocean vessels.

A sub contract has been given for the construction of the power house in connection with the Dominion Government dry dock at Lauzon, Que. The power house will be 120 by 100 ft., of brick and steel. The general contractors are M.P. and J. T. Davis.

The Montreal Harbor Commissioners' tug Sir Hugh Allan collided with the Dominion Government steamboat Levis in the St. Lawrence River, Aug. 21, sinking her in a few minutes. The Levis was on her way to Three Rivers, with a number of laborers from Government dredges. All were safely landed, as the accident occurred in shallow water. The Minister of Public Works was on board the Sir Hugh Allan.

The sale is reported of the s.s. Sindbad, owned by F. E. Hall and Co., Montreal, for about £6,850. She was built at Newcastle, England, in 1883, and is an iron vessel with double bottom for watertight ballast, and three watertight bulkheads. She is equipped with fore and aft compound engines with cylinders 27 x 54 x 33 ins., supplied with steam by one Scotch boiler at 75 lbs. pressure. Her dimensions are, length 216 ft. 2 ins., breadth 31 ft. 2 ins., depth 16 ft. 2 ins.; tonnage, 897 gross, 539 register.

The return of vessel passages, etc., through the Lachine Canal for July show that there were 1,143 vessel passages, 429 less than in July, 1914. The tonnage operated was 593,509, against 842,087; passengers carried, 12,162, against 34,818; cargo tonnage 452,033, against 715,628. A number of lake vessels usually engaged in traffic through the Lachine Canal, are at present being operated in the coasting and ocean trades, but some of them are expected to return to the lake service in time for the removal of the grain crop.

An order-in-council has been issued amending the regulations for the working and management of the dry dock at Levis, fixing the following charges: For all vessels up to 1,000 tons, \$300 for the first day of docking and \$50 a day for each subsequent day; for all vessels between 1,000 tons and 2,000 tons, \$350 and 4½¢ per ton per day; for all vessels above 2,000 tons, \$400 and 4½¢ per ton per day up to 2,000, and 2¢ per ton per day on all tonnage over 2,000. When a vessel is docked solely for painting and scraping or repair to propeller, the tariff is suspended, and a straight rate of \$50 is charged for pumping out the dock, and 5¢ per ton per day, not exceeding four days, and small repairs to the vessel's bottom, not exceeding \$50, will be allowed under this charge. When two or more vessels of the same owner are docked together for painting or repairs to propeller, only \$50 is to be charged for pumping out, but each vessel will be charged \$50 a day should the tonnage of each at 5¢ a ton per day not amount to that sum. Should a vessel for such minor work remain in dock beyond four days, then the full rates will be charged, including the charges for the first day. Cargoes will be charged the same as tonnage, but no charge will be made for ballast, and coal will be classed

as cargo. In no case will the charge be less than \$50 a day for lying in dock during the season of navigation, and no charge will be made for Sundays, unless work be done on the vessel.

### Ontario and the Great Lakes.

The Northern Navigation Co.'s s. s. Noronic, which grounded on a sandbank in the Detroit River, July 31, was released Aug. 3, without damage.

A press report states that the British Government is about to place an order at Port Arthur, for the building of two steel coaling vessels.

The U. S. ferry steamboat Clarence Fix, operating on the ferry service between Buffalo, N. Y., and Erie Beach, Ont., while under the charge of the Canadian customs officers recently for an infraction of the customs regulations, was removed by means of a trick at the end of July, and taken back to Buffalo.

Canada Steamship Lines s. s. Calgarian in arriving at Port Weller, Aug. 6, with a cargo of piling to be used in construction of harbor works there, is the first vessel to enter the port, which is under construction by the Dominion Government at the outlet of the Welland Ship Canal into Lake Ontario.

In addition to the vessels equipped with wireless telegraphy by the Marconi Wireless Telegraph Co. of Canada, as mentioned in our last issue, the steam tug Harrison, owned by J. Harrison and Sons, Owen Sound, and the steam tug Fischer, owned by the Reid Wrecking Co., Sarnia, have been equipped.

The Marine Department has given notice that the new gas lighted beacon at the outer end of the west pier at Cobourg will be placed in operation Sept. 1. It is an occulting white light, placed 20 ft. back from the outer end of the pier, and elevated 40 ft. It will be visible for 11 miles from all points of approach.

Toronto, Hamilton and Buffalo Ry. representatives waited on the Minister of Public Works at Ottawa, Aug. 12, to urge the development of Port Maitland as a lake port. The company proposes to operate car ferries and ore vessels between Port Maitland and Erie, Pa. An expenditure of \$20,000 on the port for the current year was asked.

The Port Severn locks at the Georgian Bay end of the Trent Valley canal, were opened for traffic July 26. The Trent Valley canal has been in progress for many years, and as stated at the opening, it is expected that it will be completed in a year or two. The canal will be 222 miles long, the highest point being Lake Simcoe. From Georgian Bay, the rise is 318 ft., and from Lake Ontario 470 ft.

The United States s. s. W. H. Wolf has been libelled at Detroit, Mich., by the Cleveland Grain Co., on a claim for damages of \$34,274 for a cargo of oats from Fort William, which it is alleged was damaged through the vessel springing a leak after striking the bank in the Livingstone Channel in Nov. 1913. It is stated that the steering gear was faulty and obsolete, and was the cause of the accident.

The Northern Navigation Co.'s steamships are now calling at Detroit and Windsor for passengers for the head of the lakes. It has not been decided whether this will be permanent or not. An announcement made by the President of the Windsor Board of Trade, states that the change will be of considerable benefit to that city, as well as to the company. It is not intended, as inti-



mated, in the daily press, to remove the headquarters of the company from Sarnia.

The steamships Owego, George F. Brown and Blenheim formerly owned by the Erie Railroad Lake Line, a subsidiary of the Erie Rd., have been sold to New York parties for coasting and ocean service, as a result of the Interstate Commerce Commission's decision that the company, as operating a railway must sever its connection with any steamboat lines. These vessels are cut in two to allow of their passing through the Welland Canal, and are again joined at Montreal.

The Georgian Bay Coal Co., Ltd., has been incorporated under the Dominion Companies Act, with \$100,000 capital and office at Toronto, to acquire coal and other lands, to carry on a general mining business, and in connection therewith to own and operate steam and other vessels, docks, wharves and other transportation facilities. The incorporators are, R. C. Vaughan, L. W. Mitchell, F. J. Buller, G. N. Limpricht and F. C. Allen, all of whom are officials of, or are associated with, the Canadian Northern Ry.

The U. S. Lake Survey reports the levels of the Great Lakes in feet above tidewater for July as follows,—Superior 602.29; Michigan and Huron 579.92; Erie 572.08; Ontario 245.13. Compared with the average July levels of the past ten years, Superior was 0.19 ft. below; Michigan and Huron 1.12 ft. below; Erie 0.75 ft. below, and Ontario 1.83 ft. below. It was anticipated that during August, Superior would rise 0.2 ft.; Michigan and Huron would remain stationary, and that Erie would fall 0.2 ft., and Ontario 0.3 ft.

The s. s. Alexandria, owned by Canada Steamship Lines, Ltd., while en route from Montreal to Toronto with general cargo, was driven ashore at Scarboro, near Toronto, Aug. 3, during a storm, and became a total wreck. The crew were saved with considerable difficulty. The Alexandria was built at Montreal in 1883, of oak, and was of the following dimensions,—length 173 ft. 7 ins., breadth 30½ ft., depth 8 ft. 4 ins.; tonnage, 863 gross, 508 register. She was formerly owned by the Ontario and Quebec Navigation Co., Picton, Ont., one of the companies absorbed by Canada Steamship Lines, Ltd., and until recently had been operated as a passenger vessel.

The U. S. Lake Survey, in relation to traffic in the St. Marys River above the locks, announces that a signal has been provided on the northwest pier above the third lock, consisting of a cylinder 4½ ft. diam. by 5½ ft. high, with west front painted yellow and showing a yellow light at night. When traffic in the canal leading to the third lock is congested, this signal will be hoisted about 35 ft. above water. When so hoisted it will indicate that down bound vessels loaded for the third lock should anchor north of the ranges until the signal is lowered. The absence of the signal will indicate that pier space is available in the canal. Vessels loaded to pass the Poe lock will not be governed by this signal.

### Manitoba, Saskatchewan and Alberta.

The ferry service which has been operated for several years across the Assiniboine River, between Charleswood and Assiniboia, will be discontinued as soon as the bridge, now nearing completion across the river, is ready for traffic.

The Hudson's Bay Co.'s s. s. Fort McMurray is reported to have been sunk at the Bouillion Rapids in the Peace River, by striking a rolling boulder which crushed in the bottom. It is stated that repairs would

be completed and the vessel running again by the end of August.

The material for the construction of the Peace River Tramway and Navigation Co.'s steamboat is rapidly being assembled at Peace River Crossing, and as soon as the balance, which is on the way from Vancouver, arrives, construction will be commenced and continued until the vessel is completed. This is hoped to be accomplished by the reopening of navigation in May 1916. It will be 165 ft. long, 35 ft. beam, with accommodation for 110 cabin passengers and 300 tons of freight. The engine cylinders will be 20 by 84 ins., developing about 800 n.h.p. D. A. Thomas, who is at present in Canada representing the British Government on the munitions of war matters, is chiefly interested in this company, the head office of which is at Vancouver, B. C.

### British Columbia and Pacific Coast.

Vancouver harbor, as defined by the Vancouver Harbor Commissioners Act, covers 98.4 miles of water front, and an area of 49.08 square miles.

The Grand Trunk Pacific Ry. has deposited with the Minister of Public Works at Ottawa, a description of the site with plans of a wharf and warehouse to be built at Burrard Inlet, Vancouver.

The s. s. Grahamland, which was at Victoria, B. C., recently for lumber for Great Britain, was formerly the German collier Josephena, and was captured from the Germans during the sea fight at the Falkland Islands, during the earlier stages of the war.

The s. s. Leelanaw, owned in New York, which was recently sunk by the Germans in the North Sea, was formerly owned by the Dunsmuir interests at Victoria, B. C., and has had a very varied career since leaving her builders' hands at Newcastle, England, in 1886.

The Pacific Cable Board's cable ship Strathcona has been wrecked on an unknown reef, near Suva in the southern Pacific, while bound from Auckland, New Zealand to Fanning Island with supplies. The crew were rescued by the cable ship Iris.

The Victoria Board of Trade is taking up the matter of increased dry dock facilities there, on instructions from the council, on account of several vessels having to be taken to U. S. ports for repairs owing to lack of adequate accommodation for vessels of large size at Victoria.

McFee Henry and McDonald, Ltd., has been incorporated under the British Columbia Companies Act, with \$50,000 capital and office at Vancouver, to carry on a general dredging business, and in connection therewith to own and operate all kinds of vessels and vessel operating facilities.

The Dominion Public Works Department is dredging a channel 300 ft. wide and 10 ft. deep at low water, on the north side, and 400 ft. from the jetty recently built along the north shore of Iona Island over Sturgeon bank, to facilitate the construction of a dredged channel into the North Arm of the Fraser River.

The Norwegian s. s. Thor, operating between Nanaimo, B. C., and San Francisco, California, with coal, under charter to the Western Fuel Co., San Francisco, ran ashore in Umatilla reef, 672 miles north of San Francisco, at the end of July. She was subsequently taken to Victoria for examination and repairs.

Considerable progress has been made on the construction of the Government dock at

the foot of Salisbury St., Vancouver. The last of the cribs for the foundation has been placed, and rather more than half of the surmounting wall has been finished. The balance of this, and the filling in of the interior, will, it is expected, be completed by November. The sheds which are to be erected will run the full length of both sides of the dock, which is about 800 ft. long. On the filled in portion, will be placed seven railway tracks, three of which are to be utilized for the grain elevator. The work on the foundation of the elevator is well in hand, and it is stated that the whole will be complete in readiness for handling this year's crop. Two grain galleries will run the full length of the dock.

### Mainly About Marine People.

Capt. Jos. Rinfret has been appointed to the command of the Canada Steamship Lines s. s. Quebec, vice Capt. L. R. Demers resigned.

W. Carruthers, who died at Toronto, at the end of July, was the second son of James Carruthers, President, Canada Steamship Lines Ltd.

Capt. F. G. Cook, who was well known as a master mariner in the earlier days of shipping in the Maritime Provinces, died at Central Chebogue, N. S., Aug. 16, aged 98.

Ethelbert Furness has been elected a director of Furness Withy and Co., Ltd., to fill the vacancy caused by the death of Sir Stephen Furness.

Capt. H. W. Lloyd, master of Furness Withy and Co.'s s. s. Eagle Point, died at Gaspé, Que., at the end of July, where the vessel was taking on a lumber cargo. The funeral took place at Montreal.

R. G. Allan, who died at Liverpool, England, recently, was grandson of Capt. Alex. Allan, the founder of the Allan Line. He was, from 1884 to 1904, a member of the Mersey Dock and Harbor Board, but had not been connected with the Allan Line for several years.

John Fleetwood, who retired from the position of Passenger Manager at Liverpool, England, for the American Line and the White Star-Dominion Line, at the end of 1914, died there recently aged 64. While with the company he was in charge of the Canadian services.

Commander E. Outram, R.N.R., who was in command of the Allan Line s.s. Alsatian prior to the war, and who has been continued in the command since the vessel has been utilized as an auxiliary cruiser by the British Admiralty, has been given the Distinguished Service Order for services with the patrol cruisers.

Capt. L. R. Demers, who has resigned from the command of the Canada Steamship Lines s. s. Quebec, was appointed a pilot in 1862. He took charge of the Dominion Government s. s. Druid on buoy service in 1869 and resigned in 1894 to return to the pilot service. Prior to taking command of the s. s. Quebec, he was master of the Quebec Steamship Co.'s s. s. Campano for 12 years.

The funeral of Miss Gwen Allan, one of the two daughters of Sir Montagu Allan, who lost her life as the result of the torpedoing of the s. s. Lusitania by the Germans, took place at Montreal, July 27. The body of the other daughter has not been recovered. Sir Montagu Allan was not present, as he was unable to leave England, where he is with Lady Allan, who was also a passenger on the vessel, and has not yet sufficiently recovered from injuries she received.



Telegraph, Telephone and Cable Matters.

R. N. Young, Superintendent of Telegraphs, British Columbia Division, C.P.R., recently made a complete inspection of the company's lines on Vancouver Island.

The Association of Railway Telegraph Superintendents will hold its next annual convention at St. Paul, Minn., June 20 to 22, 1916. The officers for the current year are: President, E. C. Keenan; First Vice President, L. S. Wells; Second Vice President, M. H. Clapp; Secretary and Treasurer, P. W. Drew.

The C.P.R. has announced reductions in cable rates from the west to Great Britain and Ireland. The rates for night letters are 13 words, \$1.60, and 5c a word, to London and Liverpool; to other parts, \$1.73 and 5c; week end letters, 25 words, \$2, and 4c a word, to London and Liverpool, and to other parts, \$2.25 and 5c a word.

G. C. Ward, Vice President and General Manager, Commercial Cable Co., was in Nova Scotia recently on his way home from the Panama-Pacific Exposition at San Francisco, Cal. He inspected the company's stations at Halifax and Canso, and proceeded to St. John's, Nfld., to inspect the construction work in progress there. The office at St. John's is being connected with the station at Cuckold Cove by an underground cable two miles long.

John Henderson, whose death at Portland, Ore., was announced Aug. 23, aged 75, was born at Montreal, and entered Montreal Telegraph Co.'s service at 12 years of age, eventually becoming an operator there. He subsequently went to the U. S., where he continued in telegraph service, and eventually returned to Canada, taking service in Victoria, B.C. On the laying of the Atlantic cable he returned to the U. S. and was manager of various telegraph offices, chiefly in Nevada, for the Western Union Telegraph Co.

Wireless telegraph communication was established between Japan and Hawaii, July 27. The Japanese station is erected at Funabashi, near Yokohama, and the Hawaiian station at Honolulu, the distance between these points being about 3,380 miles. The new stations will now allow of wireless communication being maintained between Japan and the United States, the Hawaiian Islands station and the United States station at Bolinas Bay, California, 2,100 miles, having been in communication since Sept. 24, 1914.

An order-in-council has been passed appointing Hon. C. J. Doherty, Minister of Justice, as Minister of Telegraphs and Telephones, in connection with the war, with power to direct that the property of any telegraph and telephone company may be taken over at any time during the war for His Majesty's service, or to place someone in control of the business to control the transmission of all messages, especially those intended for places outside of the Dominion.

Horace McDougall, who died at Petrolea, Ont., Aug. 18, aged 70, was for many years connected with the telegraph business. He superintended the construction of the first telegraph line into Fort Garry from St. Paul, Minn., in 1870, for the Western Union Telegraph Co., and was in charge of the company's Manitoba lines, and subsequently of the Great Northwestern Telegraph Co.'s lines, at Winnipeg, until his retirement in 1890. He was in charge of the telegraphic work during the second Riel rebellion. He returned to Ontario in 1891, since when he has lived successively at London, Toronto and Petrolea.

Recent reports stated that the British Government purposed taking over all the Marconi wireless telegraph stations situated in various parts of the Empire, for war purposes. While no official announcement to this effect has been made, it should be remembered that the terms under which practically all telegraph and cable business is conducted in British territory, vests the ultimate control of the traffic in the British Government. The telegraph business in Great Britain is entirely in the hands of the Government, and no private telegraph business can be conducted except under license under the Government's control. Wireless telegraphy has proved of undoubted value, both before, and during the war, and the agreements between the British Government and the Marconi companies may have given rise to the rumors. So far as Canada is concerned, the majority of the wireless telegraph stations are owned by the Dominion Government and operated on its behalf, by the Marconi Wireless Telegraph Co. of Canada, which itself owns a few stations in eastern Canada.

Among the Express Companies.

E. J. Wearing has been appointed General Assistant, Canadian Ex. Co., and Grand Trunk Ry., at Liverpool, Eng., vice the late Wm. Cuthbertson.

The Canadian Northern Ex. Co. has been ordered by the Board of Railway Commissioners to maintain express delivery and collection service hitherto furnished at Athens, Ont., pending a formal hearing of the matter by the Board.

The Board of Railway Commissioners has ordered express companies to amend their form for the taking of consignees' receipts for goods delivered, by omitting such words as "in good order" or "in apparent good order," so that the receipt required be similar to that given shipper, with liberty reserved to consignees, in case of apparent loss or damage, to qualify the receipt in accordance with facts.

What is stated to be the largest bullion shipment ever made across the ocean, arrived at Halifax, N.S., Aug. 11, from London, England, and was transferred by train to New York, in connection with war payments. The amount sent was \$52,000,000, of which \$35,000,000 was in gold. It was consigned to the American Ex. Co., and was transferred to New York in seven steel cars and accompanied by an armed guard, the train being preceded by a pilot locomotive, in view of the possibility of any damage to track or bridges.

**British Shipbuilding in War Time.**—A return of shipbuilding in the United Kingdom, issued by Lloyd's, shows that 434 merchant steamships of 1,505,025 gross tons, and eight sailing vessels of 1,900 tons, were under construction during the quarter ended June 30. This is about 81,000 tons less than during the previous quarter, and 215,000 tons less than during the corresponding quarter of 1914. During the June quarter of 1915, 74 merchant steamships of 147,964 gross tons were launched.

**Machine Guns for Newfoundland Contingents.**—Of the ten machine guns which Newfoundland is providing for its war contingents, W. D. Reid, President, Reid Newfoundland Co., has provided two; Sir Edgar Bowring, of Bowring Bros., steamship owners, two, and the Dominion Steel Co. and Nova Scotia Steel and Coal Co.'s employees at the Wabana mines have subscribed \$2,000, which is to be devoted to the fund. In addition to the foregoing the Reid Newfoundland Co. is giving an aeroplane.



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## Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

Canadian Car Service Bureau—J. Reilly, Manager, 401 St. Nicholas Building, Montreal.

Canadian Electric Railway Association—Acton, 145 St. James Street, Toronto.

Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadian Express Building, Montreal.

Canadian Freight Association (Western lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.

Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday, each month, 8.30 p.m., except June, July, and August.

Canadian Society of Civil Engineers—C. H. McLeod, 176 Mansfield St., Montreal.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Central Railway and Engineering Club of Canada—C. L. Worth, 409 Union Station, Toronto.

Meetings at Toronto, 3rd Tuesday each month, except June, July, and August.

Dominion Marine Association—F. King, Counsel, Kingston, Ont.

Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. E. Wolsey, 94 King Street West, Toronto.

Express Traffic Association of Canada—W. H. Burr, Chairman, Toronto.

Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.

Hydro-Electric Railway Association of Ontario, T. J. Hannigan, Guelph, Ont.

International Water Lines Passenger Association—M. R. Nelson, New York.

Niagara Frontier Summer Rate Committee—James Morrison, Montreal.

Nova Scotia Society of Engineers—A. R. McCleave, Halifax, N.S.

Quebec Transportation Club—A. F. Dion, Quebec.

Ship Masters' Association of Canada—Capt. E. Wells, 45 St. John Street, Halifax, N.S.

Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.

Western Canada Railway Club—Louis Kon, Box 1707, Winnipeg. Meetings at Winnipeg, 2nd Monday each month, except June, July, and August.

## Transportation Conventions in 1915-16.

Sept. 14-16.—Roadmasters' and Maintenance of Way Association, Chicago, Ill.

Sept. 14-16.—Master Car and Locomotive Painters' Association of the United States and Canada, Detroit, Mich.

Sept. 14-17.—Railway Signal Association, Salt Lake City, Utah.

October.—American Association of Dining Car Superintendents.

Oct. 4, 5.—American Association of Traveling Passenger Agents, Boston, Mass.

Oct. 4-8.—American Electric Railway Association, San Francisco, Cal.

Oct. 5-7.—Railway Fire Protection Association, Chicago, Ill.

Oct. 13-15.—American Association of Railway Surgeons, Chicago, Ill.

Oct. 19-21.—Maintenance of Way and Master Painters' Association of the United States and Canada, St. Louis, Mo.

Oct. 19-21.—American Railway Bridge and Building Association, Detroit, Mich.

Dec. 7-10.—American Society of Mechanical Engineers, New York, N.Y.

Jan. 18-20, 1916.—American Wood Preservers' Association, Chicago, Ill.

March 21-23, 1916.—American Railway Engineering Association, Atlantic City, N.J.

May 2-5, 1916.—Air Brake Association, Atlanta, Ga.

June 28, 1916.—Association of American Railway Accounting Officers, Detroit, Mich.

## Book Reviews

The Manual of Statistics, Stock Exchange handbook for 1915. 1114 pages, 8 by 6½ ins., cloth. The Manual of Statistics Co., 56 Pine St., New York. \$5.

This is the 37th annual issue of this standard publication. The most recent important developments and changes in the position of railway and industrial corporations on the continent are noted. The information given is the latest available, and it is conveniently arranged under various headings. Under railways special attention is given this year to the G. T. R., and the G. T. P. R., maps of which systems are given. The last section of the volume gives elaborate information of the national debts, funded obligations, etc., of the several countries whose stocks and bonds are quoted on the stock exchanges of the continent, and numerous tables showing the prices of bonds, and statistical information as to the production of iron, coal, cotton and other raw produce on the continent. All the information is well arranged and handily indexed for reference. It is a valuable manual of reference for the investor and man of public affairs.

## Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

American Locomotive Co.—J. O. Hobby, Jr., has been appointed Treasurer.

Canadian Steel Foundries, Ltd.—F. E. Smith has been appointed Sales Manager. Office, Montreal.

Ottawa Car Manufacturing Co., Ltd.—W. M. Arnold, heretofore Assistant General Manager, is reported to have been appointed General Manager.

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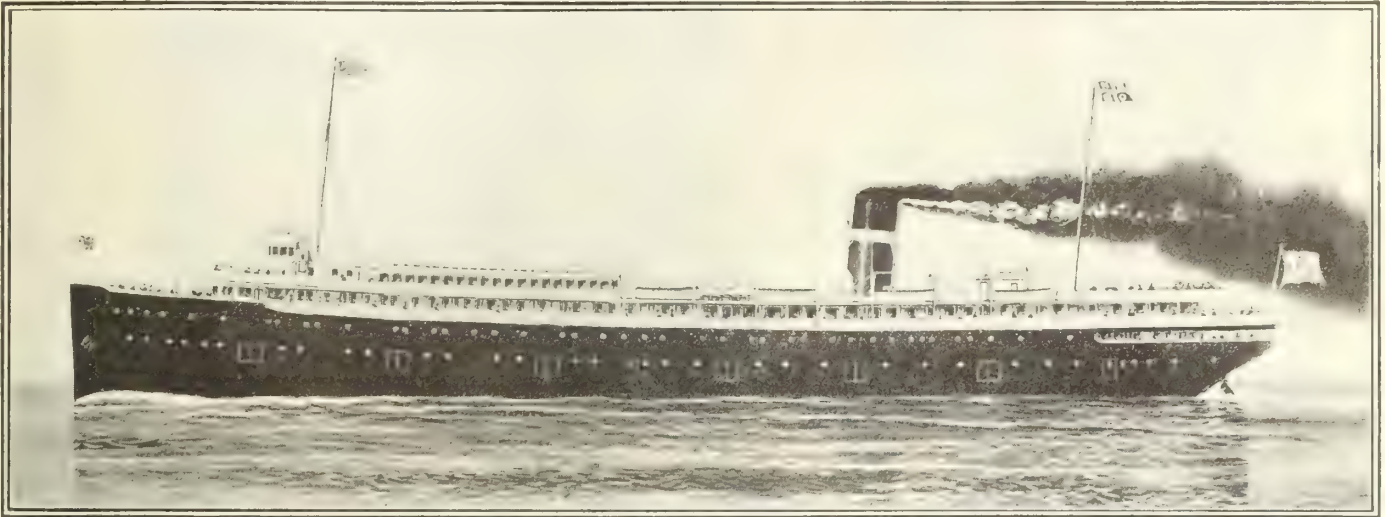
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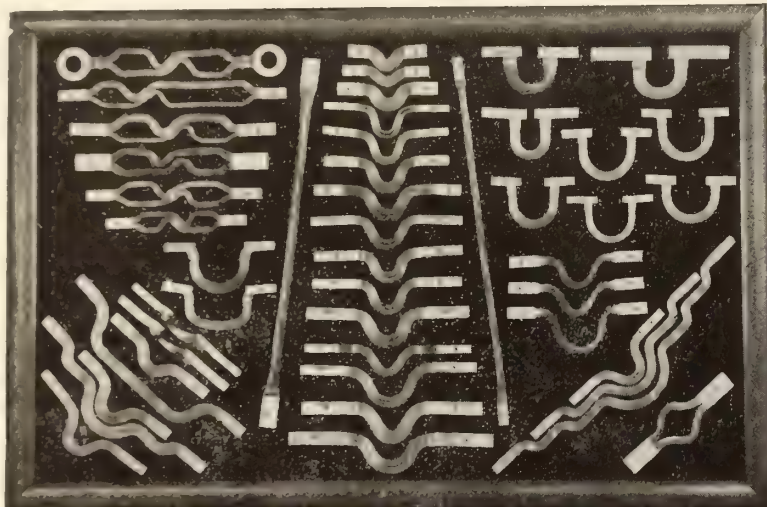
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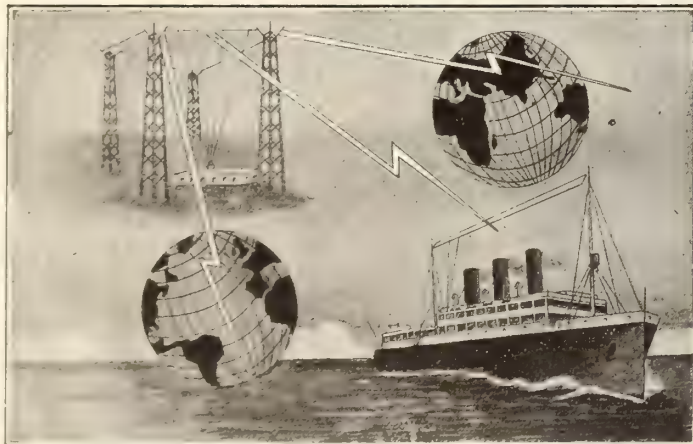


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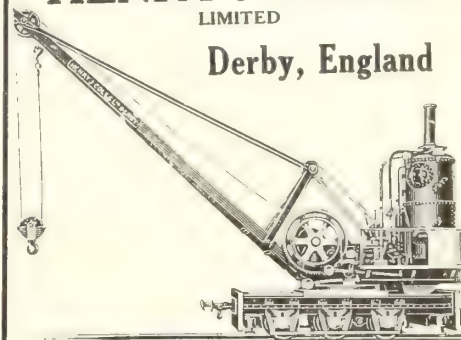
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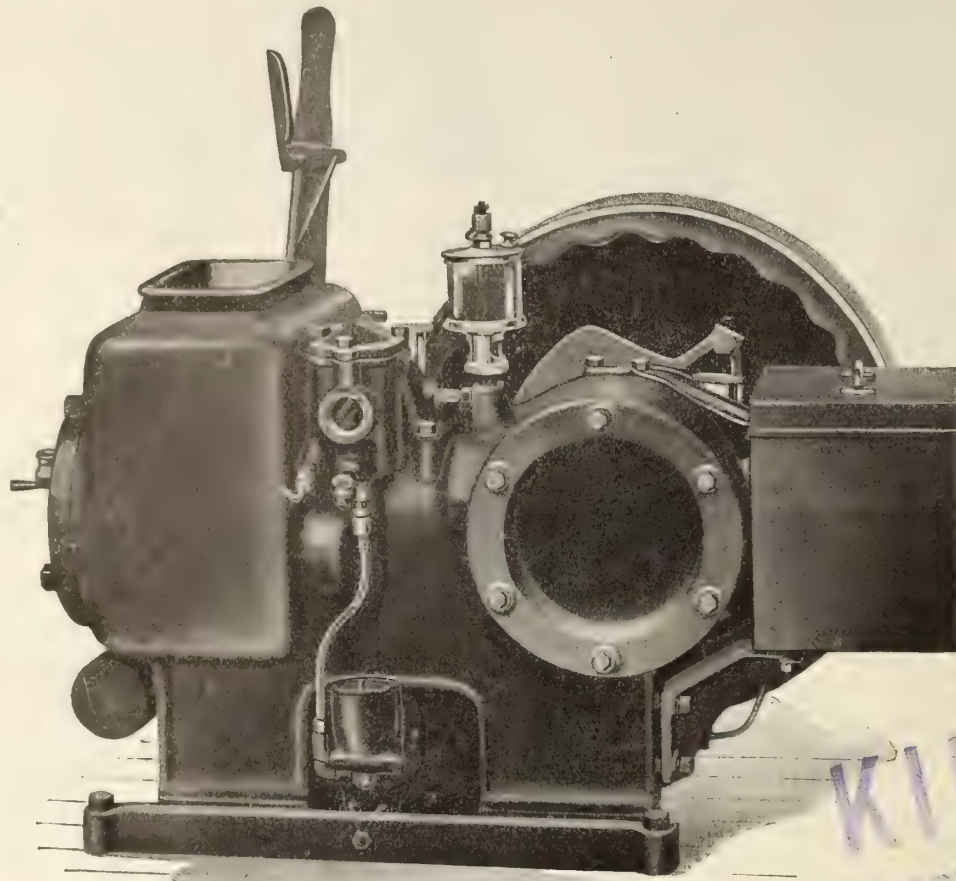
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The Winning Name

**Mr. Arthur Jones, Section Foreman, the Winner**

The G. T. R., Scarboro Junction, Ont.

Two other men sent in the same name, "Jack Canuck," and, while Mr. Jones was the first man to send in his answer to us, we feel that it is only fair to award

**MR. JAS. HOTSON, Bridgeman,**  
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**MR. JAS. LEGGET, Section Foreman,**  
Claremont, Ont.

each a 5 H.P. Jack Canuck, in token of our appreciation of their services in sending in a name which so happily describes our Engine.

The prizes awarded above are the result of our "Name it—and you can have it" contest to secure a name which would be popular among the trackmen of Canada. A better name or more popular than "Jack Canuck" could not have been chosen.

The contest committee consisted of Mr. J. M. R. Fairbairn, Asst. Chief Engineer of the C.P.R.; Mr. Acton Burrows, Managing Director, Canadian Railway and Marine World; and Mr. Graham Drinkwater, V.P., The Canadian Fairbanks-Morse Co., Limited.

For further information address our nearest branch.

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**CANADIAN PACIFIC RAILWAY COMPANY****Dividend Notice.**

At a meeting of the Board of Directors, held to-day, the following dividends were declared:

On the Preference Stock, two per cent. for the half-year ended 30th June, last.

On the Common Stock, two and one-half per cent. for the quarter ended 30th June last, being at the rate of seven per cent. per annum from Revenue and three per cent. per annum from Special Income Account.

Both dividends will be paid on 1st October next to Shareholders of record at the closing of the books in Montreal, New York and London, at 1 p.m. on Saturday, 21st August next.

All books will be re-opened on Thursday, 7th October next.

By order of the Board

**W. R. BAKER,**

Secretary.

Montreal, 9th August, 1915.

**JAS. W. MOFFAT,**  
Secretary.

**CHARLES WARNOCK,**  
Treasurer & Manager.

**CANADIAN PACIFIC RAILWAY COMPANY****NOTICE TO SHAREHOLDERS**

The Thirty-fourth Annual General Meeting of the Shareholders of this Company, for the election of Directors to take the places of the retiring Directors and for the transaction of business generally, will be held on Wednesday, the sixth day of October next, at the principal office of the Company, at Montreal, at Twelve o'clock noon.

The Common Stock Transfer Books will be closed in Montreal, New York and London at 1 p.m. on Saturday, the twenty-first day of August. The Preference Stock Books will be closed in London at the same time.

All books will be re-opened on Thursday, the seventh day of October.

By order of the Board,

**W. R. BAKER,**

SECRETARY.

Montreal, August 9th, 1915.

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We license manufacturers and railways to build and use the pay-as-you-enter car, the patents on which are owned by us.

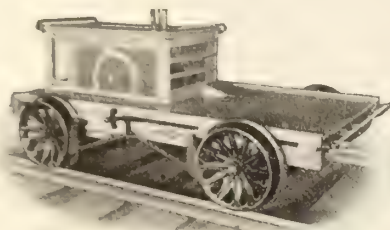
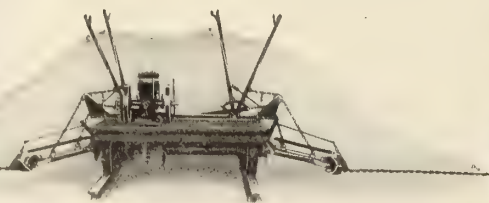
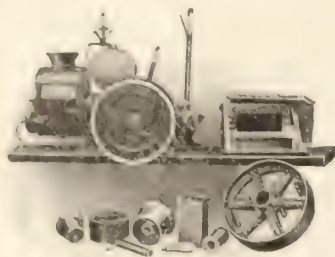
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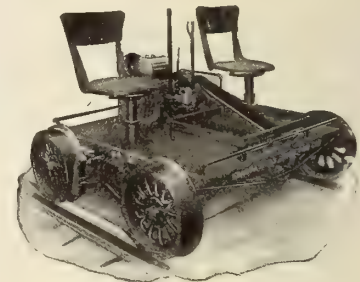
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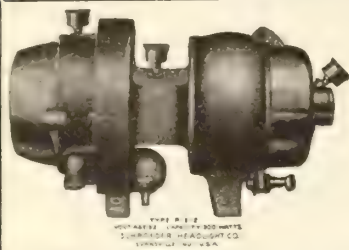
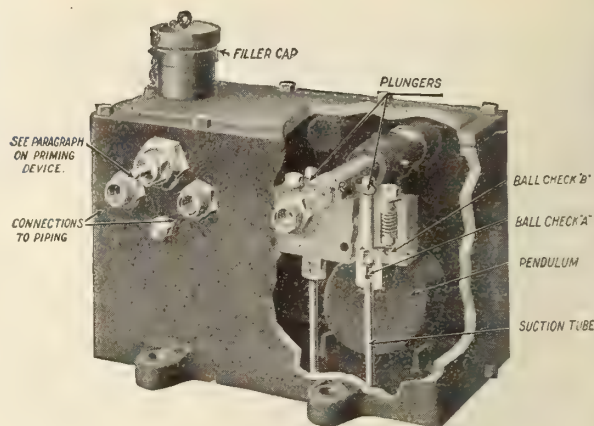
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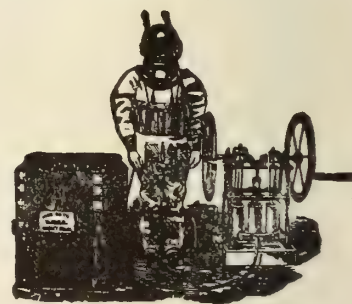
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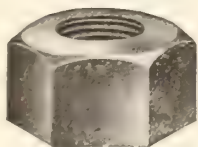
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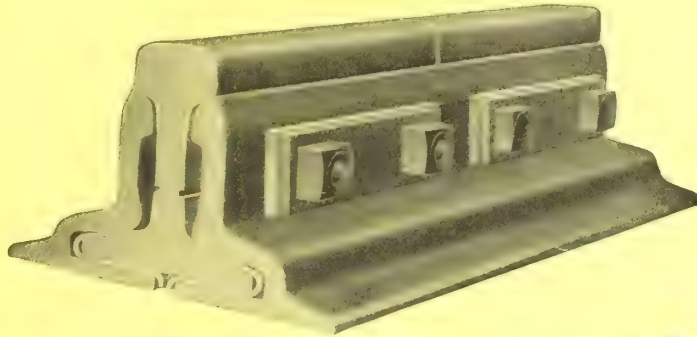
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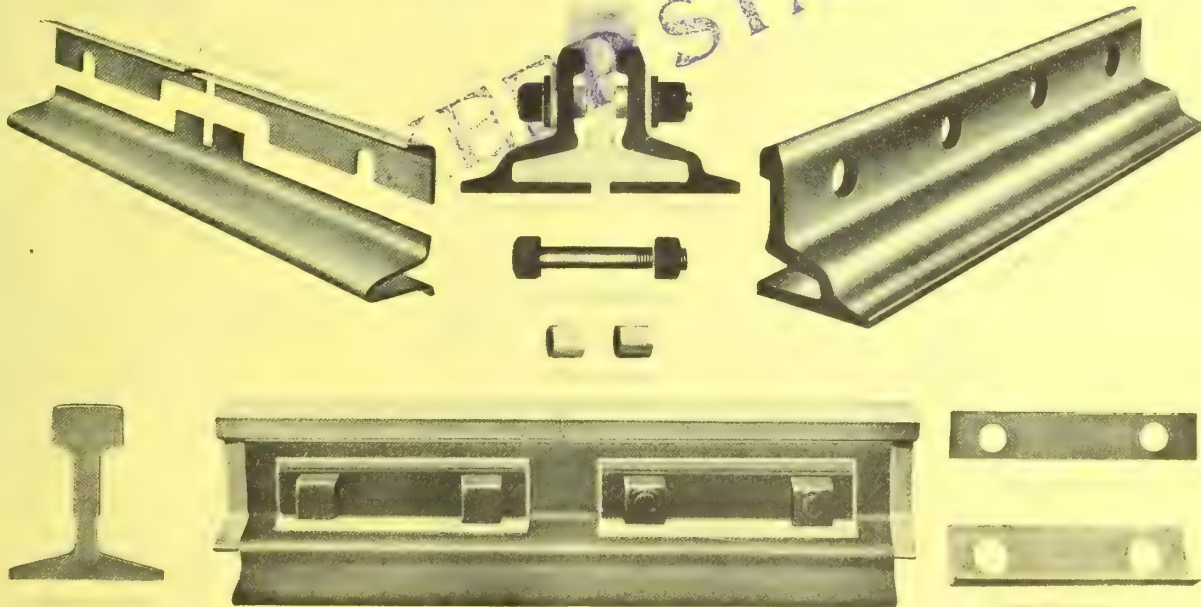
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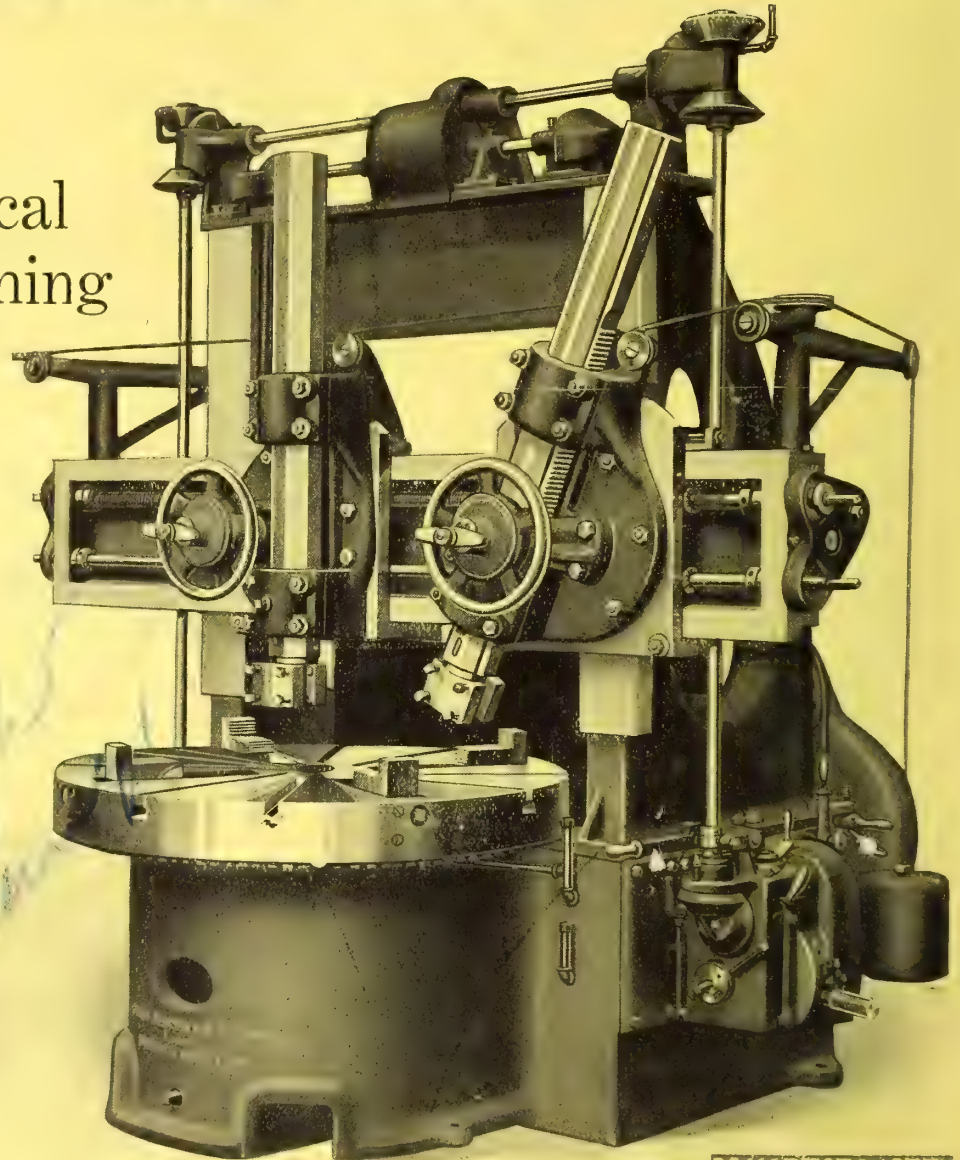


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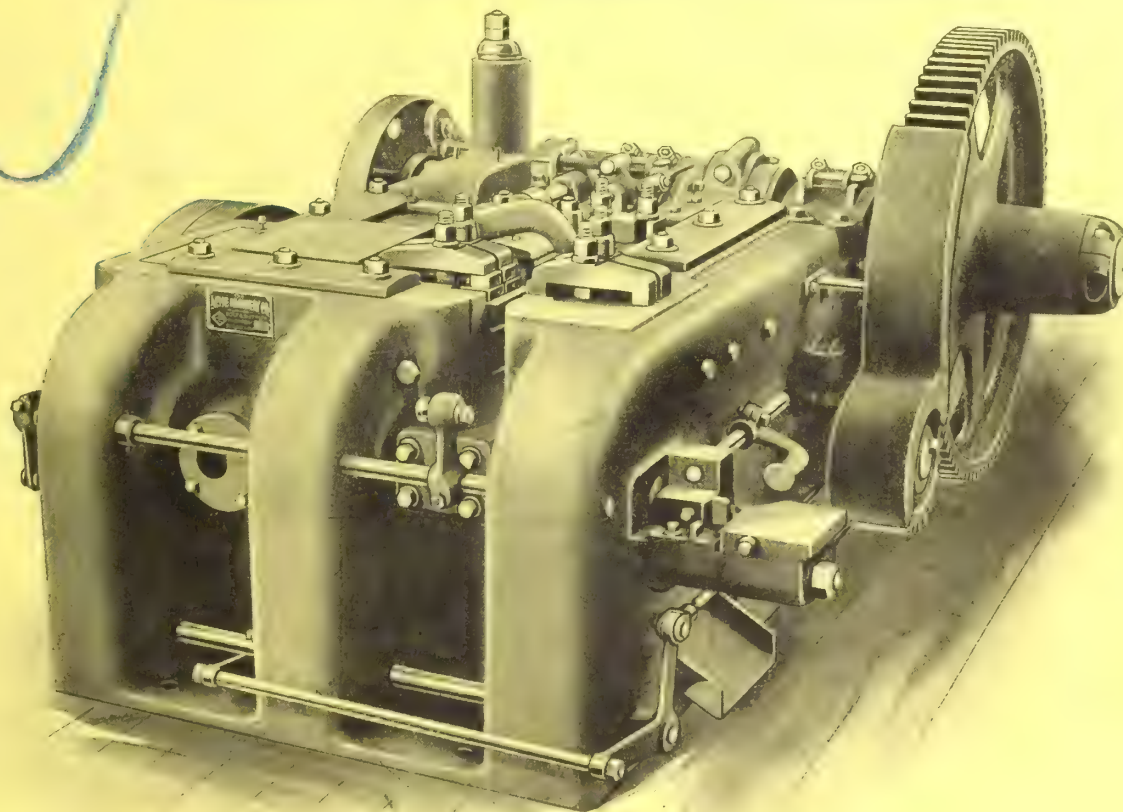
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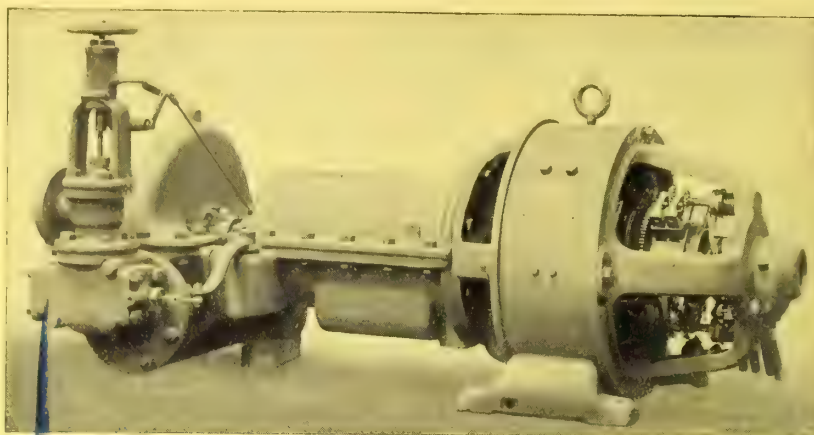


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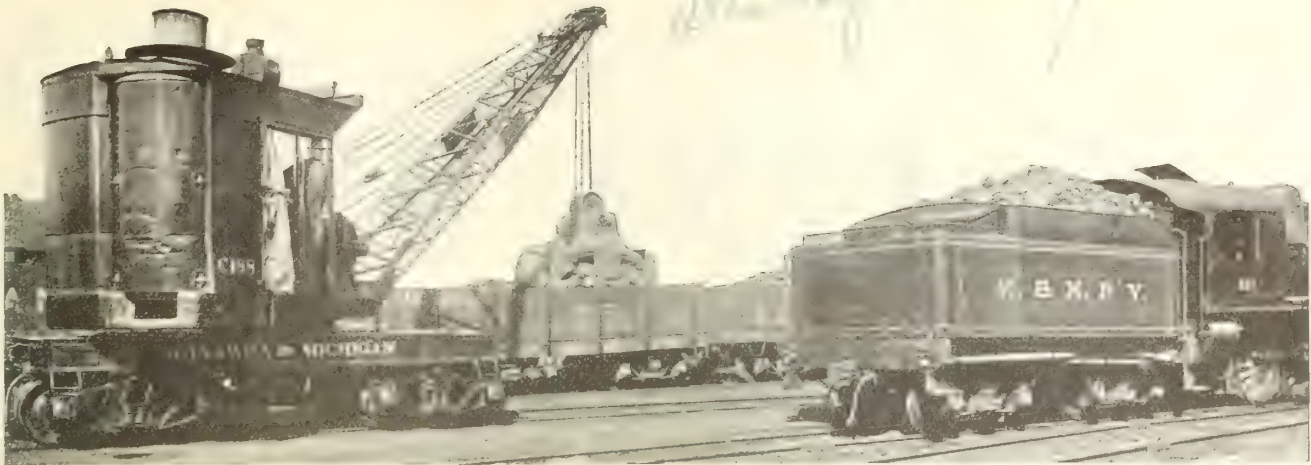


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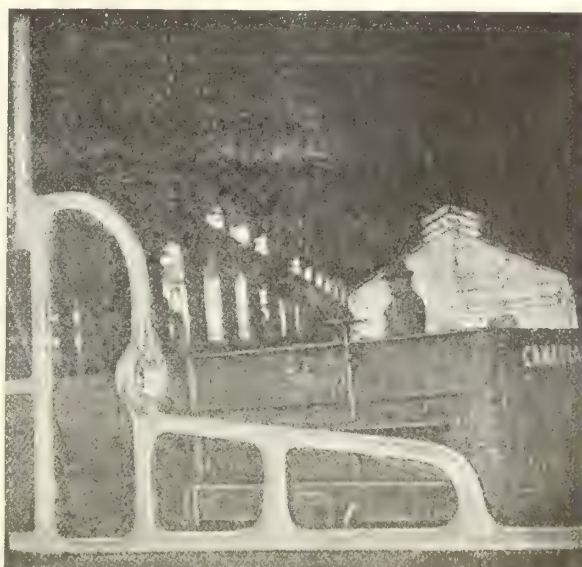
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R. R. Department Representatives

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# Meeting One Financial Obstacle to Adequate Signal Protection

There is little doubt that there would be a tremendously greater amount of mileage protected by automatic block if first cost were the only difficulty to be encountered. The great difficulty, however, in the universal use of fixed automatic block signals is found in the continuous cost of maintenance.

The advantage in this respect of

## Simmen Automatic Block Cab Signals



is shown by the fact that none of the four roads which are operating the Simmen System have found it necessary to provide any special organization or additional labor for inspection purposes.

The reason for this is that the track and overhead installation of the Simmen System is so simple (involving no apparatus along the track except standard telephone overhead construction and simple signal rails) that the regular track and line maintenance labor is ample to care for these elements.

All operating electrical apparatus is either in the cab or in the dispatcher's office.

The cab apparatus is easily inspected when the car is in for regular inspection.

The apparatus in the dispatcher's office is readily inspected and cared for by the dispatcher, with the occasional assistance of a lineman.

This enormous comparative saving in maintenance costs is proved by the experience of the four roads on which the Simmen System is now, and has for some time been, standardized.

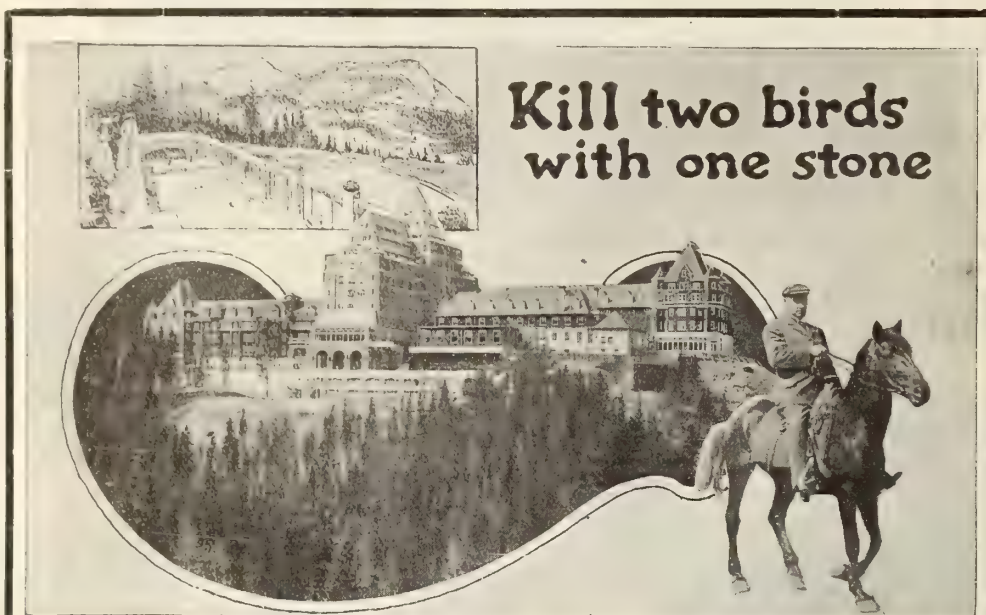
The importance of this fact in any signal installation is obvious.

## THE NORTHEY-SIMMEN SIGNAL CO., Ltd.

### TORONTO

Simmen Automatic Railway Signal Co., Buffalo





and travel via THE

# CANADIAN ROCKIES

to the

## PANAMA PACIFIC EXPOSITION

If you are planning your 1915 trip to San Francisco, make sure your ticket reads via Canadian Pacific, otherwise you will miss the grandeur beauty of nature's most stupendous works—The Canadian Rockies.

**BANFF      LAKE LOUISE      FIELD      GLACIER**

Are important tourist stop-over points on the Canadian Pacific Railway route to the Pacific Coast. These have excellent hotel accommodation, with opportunities for riding, climbing, swimming, boating and golf.

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**W. FULTON**

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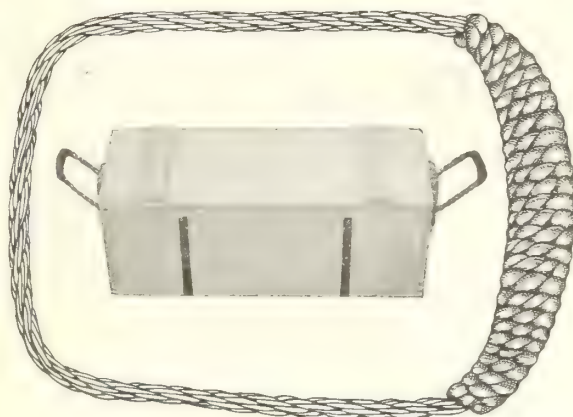
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Approved by the Shell Committee  
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**"DOMINION" WIRE ROPE**

*We are the Originators of*  
**THE MARLINE COVERED HAND GRIP**

*QUICK SHIPMENT*



**The DOMINION WIRE ROPE CO., LIMITED, MONTREAL**

In Peace or War ***Toledo*** High Speed Steel  
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*Manufactured by the World Famous Makers*

**JOHN HY. ANDREW & CO., LIMITED**

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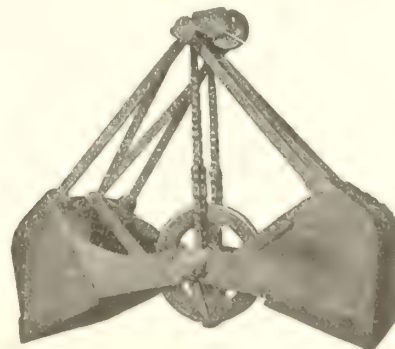
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use

**"Industrial Works" Locomotive  
Coaling and Wrecking Cranes**

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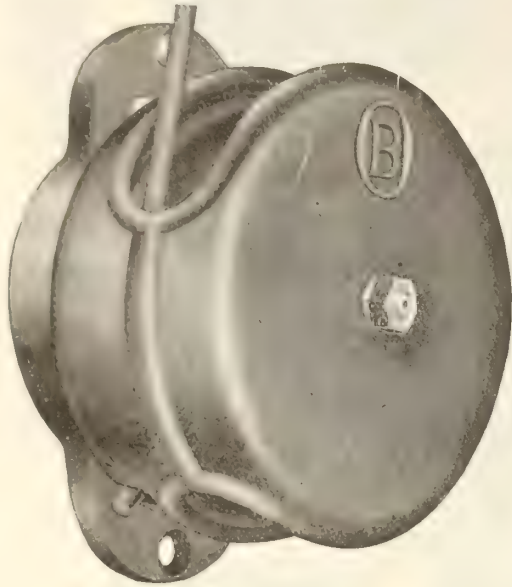
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## Approved by Railway Men



Here are a few of the many favorable comments we have received:

"Goods furnished on trial have proved satisfactory, especially the trolley catcher."

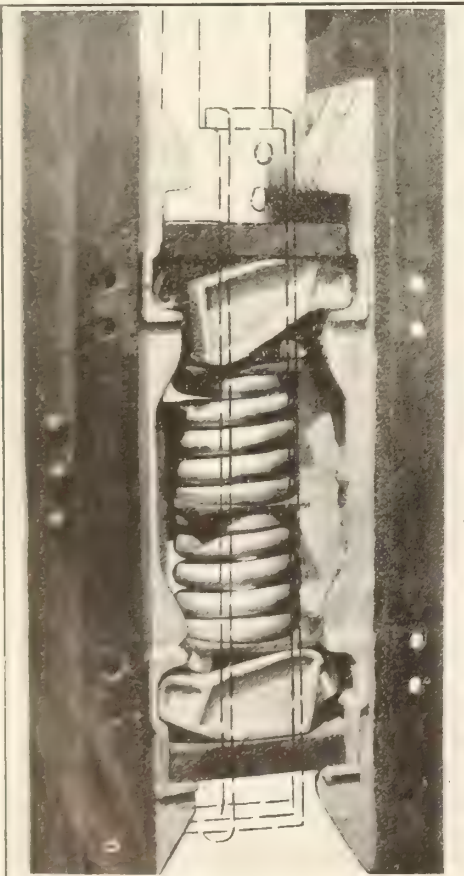
"Furnish just the same as those shipped on trial which were accepted."

"You may bill us for the same at your earliest convenience. We feel sure they are well worth the price."

We know the O-B Catcher is right and we want to show you. We will send you one for trial, to be returned at our expense if you are not pleased. Why not write to-day?

## The Ohio Brass Co.

Mansfield, Ohio, U.S.A.

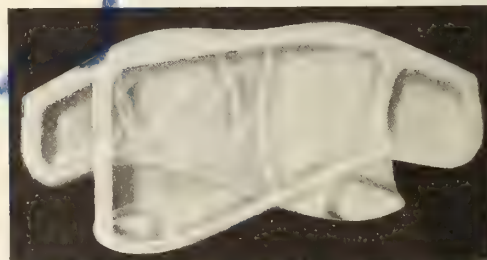


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A FRICTION DRAFT GEAR OF FIVE TIMES THE CAPACITY OF THE "G" SPRING GEAR AT THE SAME COST.

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CAPACITY  
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KEEP YOUR CARS OFF THE REPAIR TRACK  
BY USING THE YOST DRAFT GEAR.

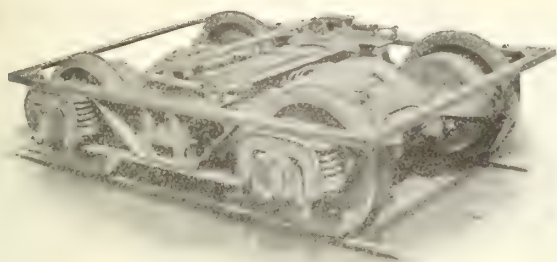
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MANUFACTURED AND SOLD BY

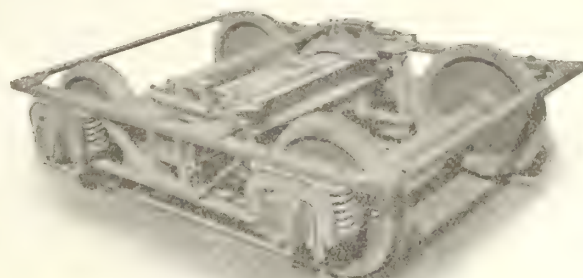
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## The "National" Truck for Interurban Service



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WITHOUT MOTORS.

When we can say that we have never had a dissatisfied customer it means that the "NATIONAL" Truck has unusual merit. It solves the problem of minimum weight with maximum efficiency and smooth riding qualities.

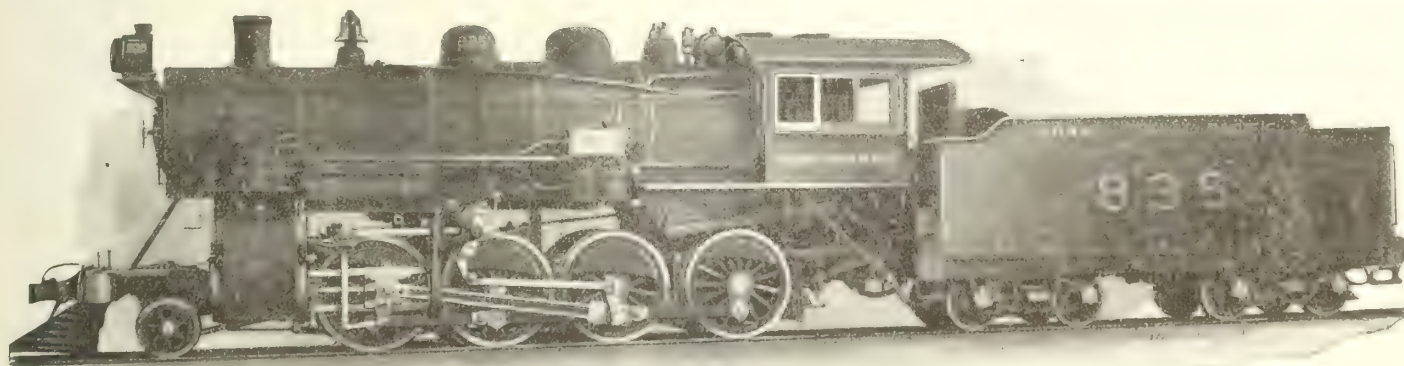
"There are no rough spots on the road that uses the "NATIONAL" Truck.

## National Steel Car Company, Limited

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Consolidated Type Locomotive Built for Freight Service on the Grand Trunk Pacific Railway.

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Long experience, new equipment, efficient management and expert workmen, are guarantees that our Locomotives will give record service. Over 1,200 Locomotives have been built at our Works since the erection of the plant. We are builders of Simple and Compound Locomotives adapted to every variety of service, for Railway Contractors, for Industrial Purposes, Mines, all classes of Railway Work, etc.

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**CANADIAN LOCOMOTIVE CO., Limited, Kingston, Ontario**



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is equipped with triple nickel-plated polished reflector of special parabolic design which centralizes the rays of a concentrated filament Mazda bulb perfectly focused, throwing a straight, strong beam of light down the track, far ahead of the car.

Extremely light—weighing three pounds less than any other Headlight.

No sacrifice has been made to attain this lightness of weight for the McLAIN No. 25 is as strong as any Headlight made, and has an illuminating power in excess of other Headlights employing an incandescent globe.

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Guaranteed to give good service.

Write for booklet and prices.

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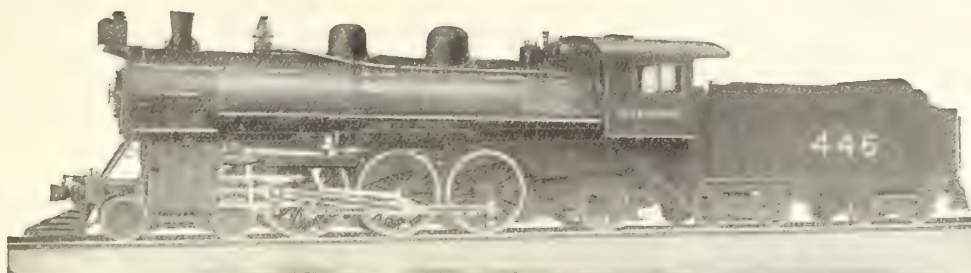
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**NEW GLASGOW, N.S.**



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Total weight of engine, 243,500 pounds; weight on drivers, 154,000 pounds; diameter of drivers, 73 inches; boiler pressure, 180 pounds; cylinders,  $23\frac{1}{2}$  x 28 inches; maximum tractive power, 32,400 pounds.

On a 185 mile run at an average speed of 40 miles per hour, these new Pacific type locomotives handle 10 cars and consume 12,884 pounds of coal and 9,750 gallons of water per trip.

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This is a saving of 26.9 per cent. in coal and 31.6 per cent. in water, with one extra car.

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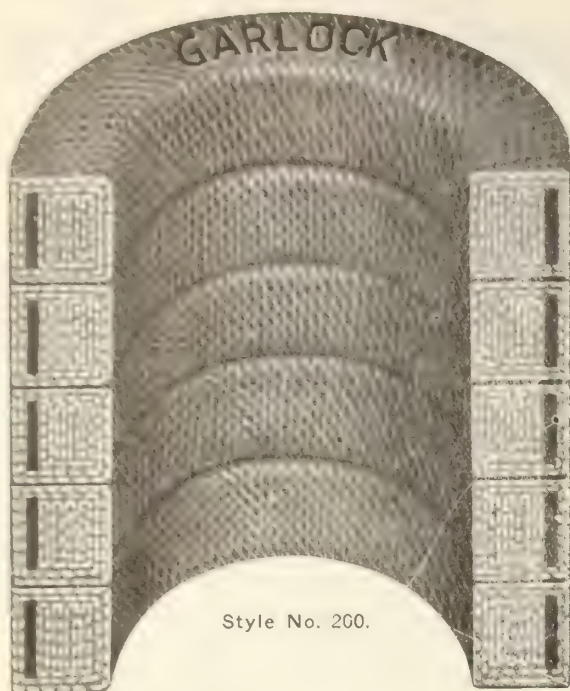
on Canadian Northern Railway  
Lines for Moose and Deer

North of Quebec, in Central Ontario and North of Parry Sound. Also along the south shore of Nova Scotia.

Further particulars are obtainable in our booklet, "Where to Fish and Hunt," or from the General Passenger Departments, 68 King Street East, Toronto, Ontario; 226 St. James Street, Montreal, Quebec; and 123 Hollis Street, Halifax, N.S.







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Every pound of our high pressure packing carries with it the Garlock guarantee of satisfactory and economical service.

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There is absolutely no wear to them, and we guarantee that they will not fade or be affected by the weather in any way.

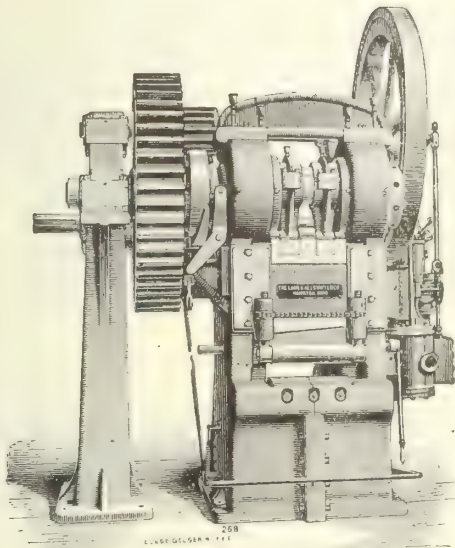
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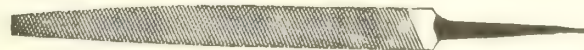
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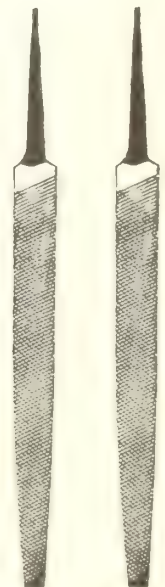
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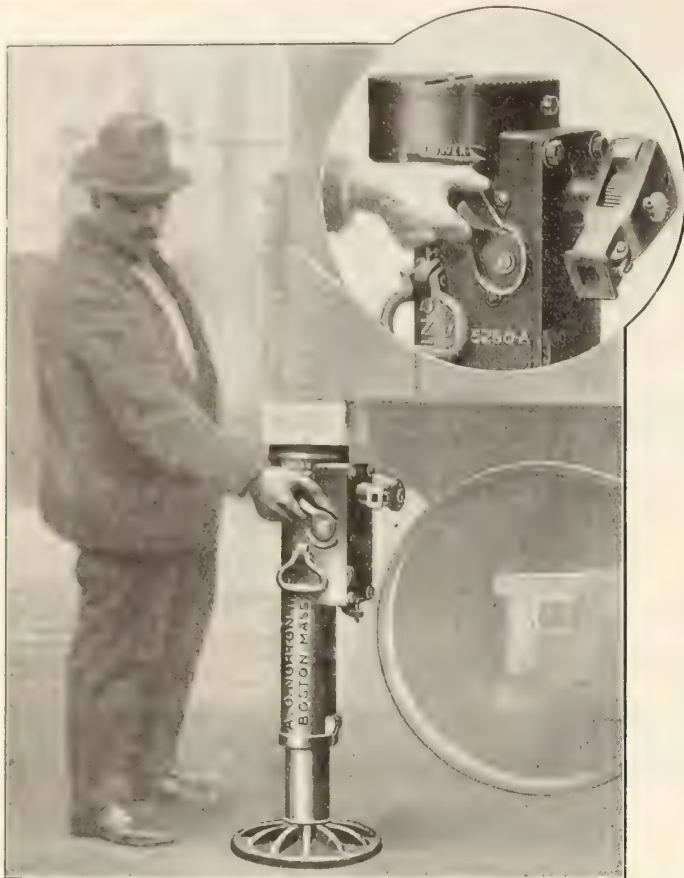
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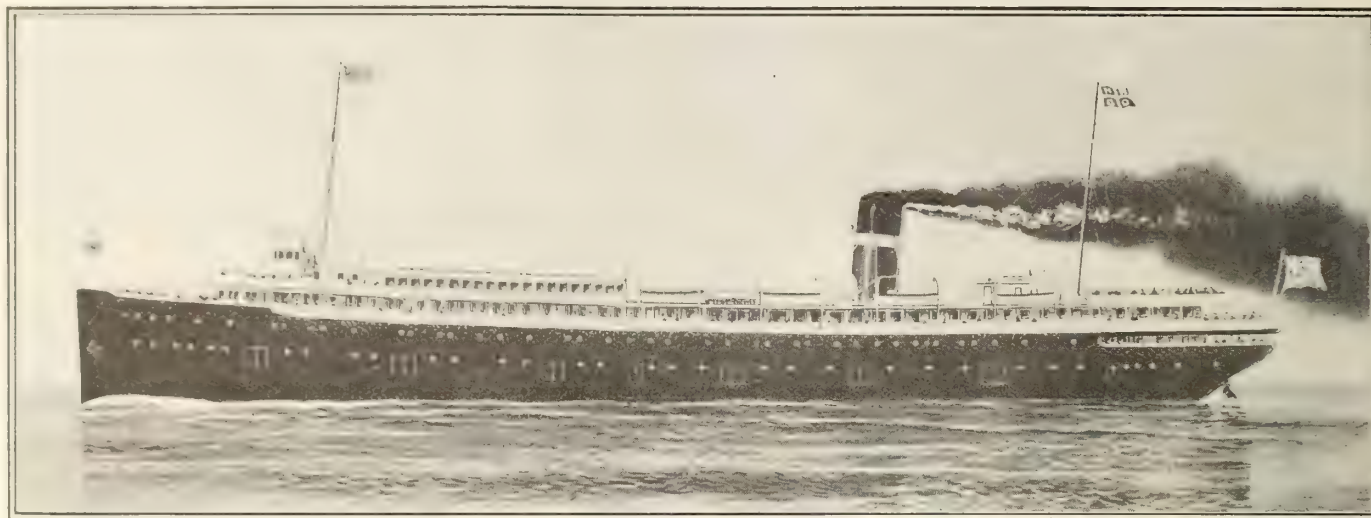






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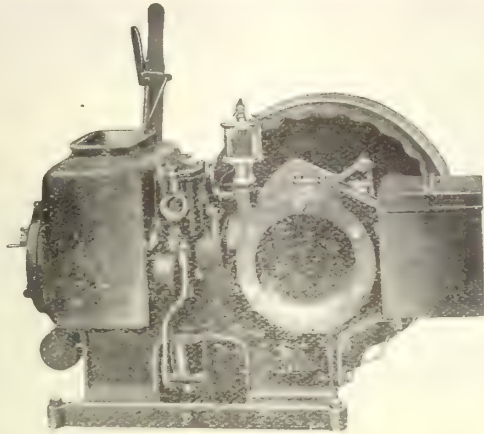
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Built by a firm who have made over 11,000 Railway Hand and Motor Cars, it includes all of the best ideas for an engine of this kind.

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☐ Buying wire for railway signalling purposes on a price basis is a crime.

☐ Climatic conditions, especially in Canada, seriously affect the wire connecting the signals. Extremes of heat and cold, gases, acids, and oils are some of the many elements that railway signal wire is subjected to and must combat.

☐ Northern Electric Railway Signal Wire stands the tests of time. It not only meets but exceeds the "R.S.A." Specifications. It is backed by the largest makers of wires and cables in the country, and sells on a quality instead of a price basis.

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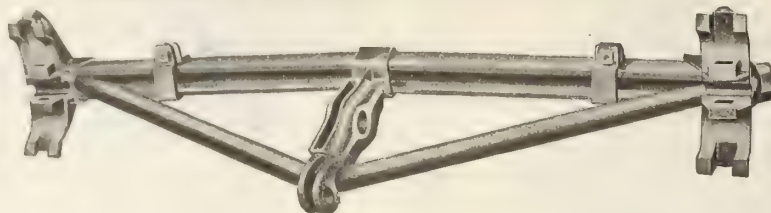


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## The Parmelee Pipe Wrench "The Toothless Wonder"



### PRICE LIST C

Handle	Set No.	Pipe Handled	Set Complete	Extra Handle	Extra Girths
10 in.	1	$\frac{3}{8}$ , $\frac{1}{2}$ , $\frac{3}{4}$ , 1 in.	\$5.00	\$2.25	$\frac{3}{8}$ , $\frac{1}{2}$ , $\frac{3}{4}$ , 1 in. \$ .75
20 in.	2 $\frac{1}{2}$	$\frac{3}{4}$ , 1, 1 $\frac{1}{4}$ , 1 $\frac{1}{2}$ , 2 in.	7.50	2.50	$\frac{3}{4}$ , 1, 1 $\frac{1}{4}$ in. 1.00
25 in.	3 $\frac{1}{2}$	1 $\frac{1}{2}$ , 2, 2 $\frac{1}{2}$ , 3 in.	7.50	3.00	1 $\frac{1}{2}$ , 2 in. 1.25
					1 $\frac{1}{2}$ , 2, 2 $\frac{1}{2}$ , 3 in. 1.25

Prices on larger sizes furnished upon application.

DESIGNED ESPECIALLY to handle pipes spaced closely as in coil work. No. 2 $\frac{1}{2}$  wrench illustrated requires but three-quarter inch space between pipes.

POSITIVE GRIP instantly taken. Operates without lost motion in stroke of handle. Can be locked or released easily in any position on the pipe.

RATCHET-LIKE ACTION. Successive grips can be taken without having to hold the wrench on the pipe. By a slight twist of the handle, which is round and knurled, the wrench is locked in any position.

CAN'T CHEW. The Parmelee will make or break the tightest joints without injuring pipe or threads, as it has no teeth. The only wrench suitable for galvanized pipe.

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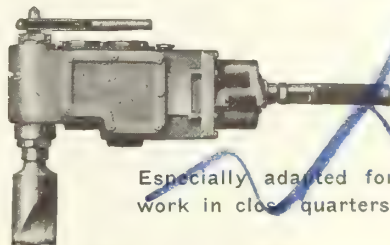


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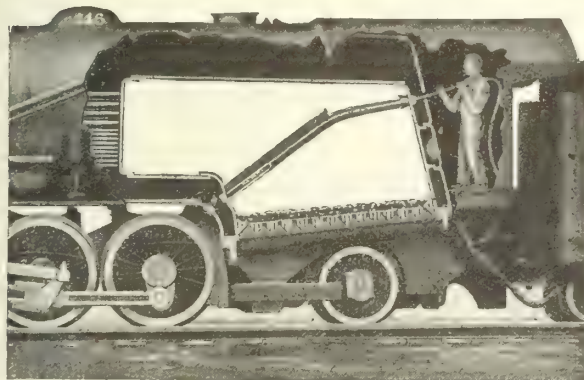
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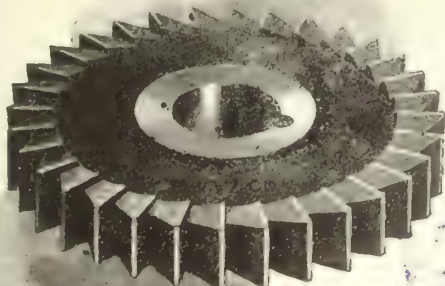
The Lagonda Arch Tube Cleaner will remove these scale deposits easily and quickly. They are built for all sizes of tubes and can be driven by either water, air or steam. Send for Catalogue W-1 describing the construction and operation of these Cleaners.

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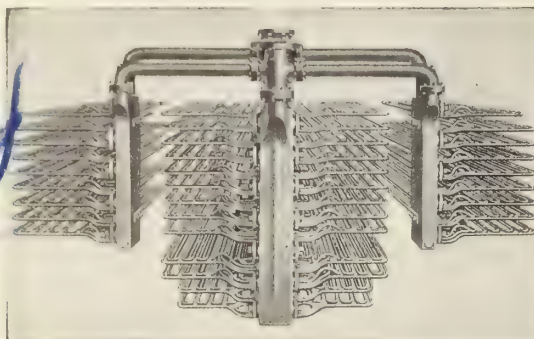
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5. It results in a saving of fuel over saturated plants, both operating under the same draft conditions, of 10% to 20%.
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7. It does not prevent rapid, thorough, and frequent cleaning of the tubes.
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# Canadian Railway and Marine World

P 432.

October, 1915.



SIR WILLIAM CORNELIUS VAN HORNE, K.C.M.G.,

Born February 3, 1843. Died September 11, 1915.

From an autographed photograph given the Managing Director of Canadian Railway and Marine World in January 1914.



## Freight Cars for European Continental Service Being Built in Canada.

The British Government is having built by the National Steel Car Co. at Hamilton, Ont., for service in France and Belgium, 1,300 steel frame covered cars of the M. M. No. 1 type, which are largely used in some parts of the European continent. One hundred of them are being provided with accommodation at one end for a brakeman on guard. The principal dimensions of the 1,200 cars are as follows:—

Length over end sills	25 ft.	3 5-32 ins.
Wheel base	8 ft.	7 15-16 ins.
Length over buffers, free	28 ft.	5 1/8 ins.
Length over buffers, compressed	27 ft.	11 7-16 ins.
Length over pulling force of draw hooks	26 ft.	5 1/8 ins.
Wheel base	11 ft.	7 25-32 ins.
Height from rail to centre of buffers and draft gear	3 ft.	5 3-16 ins.
Height from rail to top of floor	4 ft.	0 1-32 ins.
Height from rail to top of roof caps	12 ft.	0 29-32 ins.
Total length over roof	25 ft.	5 1/8 ins.
Total width over roof	9 ft.	2 13-32 ins.
Clear length between end protection boards	24 ft.	11 7-32 ins.
Clear width, between base boards	8 ft.	4 ins.
Clear height under leg of inside plate tee	7 ft.	1 19-32 ins.
Clear height of door opening	6 ft.	1 1/8 ins.
Clear width of door opening	4 ft.	1 1-16 ins.
Cubic capacity		1482 cu. ft.

The cars are mounted on 4 rolled steel wheel 40 15-16 ins. dia. on tread line and forged steel axles with 5 1/2 x 11 11-32 in. journals placed at 6 ft. 7 23-32 ins. centres. The journal boxes are of cast steel and are equipped with cast steel covers bolted on malleable iron oil reservoirs, arranged to be filled from outside and provided with oil pad, spring and wick, also bronze bearing, cast steel wedge and wood dust guard. The pedestals are of cast steel with forged tie bars. The bearing springs are of semi-elliptic type and rest on top of the journal box, being connected to the car by means of forged links attached to spring ends and cast steel brackets secured to car sills. The brake gear is operated by hand only, by means of two long levers, one at each diagonally opposite end of car, two wheels only being braked through cast steel brake heads, provided with oak blocks, each being operated independently of the other. The buffers are of the plunger type with volute springs, each having a total compression of 2 27-32 ins. The draw gear is composed of a forged steel draw hook with shank secured to a cast steel compression washer by means of a chrome nickel steel key. Between the compression washer and a steel bearing casting secured to end sill is a volute compression spring, connection with another car made by a screw coupling and shackle.

**CONSTRUCTION OF CAR UNDER-FRAME**—Pedestal sills:—Two 10 in. 30 lb. I-beams continuous between inside of end sill webs into which they are coped and connected to end sills by means of a 17 x 3/4 in. end sill top cover, an 8 1/2 x 3/8 in. end sill bottom cover and a cast steel angle connection of substantial design. End sills:—Two 10 in. 27.2 lb. ship channels continuous between inside of flange of corner post angle. Crossties:—Near ends of car, two 10 in. 21.8 lb. ship channels, continuous between inside of webs of pedestal sills into which they are coped, connections being made by 5-16 in. top and bottom gussets and 4 x 4 x 3/8 in. angle connections. Crossties:—Near centre and intermediate, three 6 in. 12.5 lb. ship channels, continuous between and coped into pedestal sills and connected to them by 5-16 in. gussets, bottom, and 4 x 4 x 3/8 in. angle connections, the middle part of the upper

flange is provided with a 7 x 3/8 in. cover plate 3 ft. 1 1/4 in. long. Centre sills:—At end, two 10 in. 25 lb. I-beams at each end, coped into end sill and end cross tie respectively, connected to end sill top and bottom cover and to cross tie top and bottom 5-16 in. gussets, also connected to end sill and cross tie webs with 4 x 4 x 3/8 in. angle connections. Floor stringers:—Two 3 in. 7.1 lb. ship channels continuous between backs of each cross ties, and connected to cross tie gussets and top cover plates. Side sills, 4 x 3 x 3/8 in. angles continuous between and coped into inside of end sill web. The side sills are supported for their length between end sills by cast steel extension brackets. These being riveted to the pedestal sills. Floorboards:—1.25-32 in. thick with plane joints in angle formed by flooring and siding is secured a base board 31-32 in. thick.

**CONSTRUCTION OF CAR SUPER-STRUCTURE**—Side posts:—Three per side, 3 in. x 7.1 lb. ship channel. Door stop posts:—Composed of 1 per side, 5 1/4 ft. structural channel with 4 1/2 x 3 x 3/8 in. angle riveted to web, long leg of angle turned out to form a door stop. All the above posts are secured at their lower end to the side sill angle and extension casting. Corner posts:—4 x 4 x 3/8 in. angle. Each portion of side frame between side door and corner posts is provided with a 3 1/4 x 5-16 in. brace secured to side sill against door post and to side post and corner post. End posts:—4 x 4 ins. x 10.5 lb. tee, 2 per end. Side plate:—4 x 2 in. x 6.7 lb. tee continuous between inside flange of corner post angle. Side and end sheathing of 31-32 in. tongued and grooved boards. Side door is of the sliding type with bottom corners provided with brackets and rollers and arranged to run along the tee track. The top corners of the door are provided with eye castings arranged to fit over and slide along a guide rod. A shutter of pressed steel no. 20 gauge is arranged in upper right hand portion of side door, the bottom edge of shutter is equipped with hinges to enable it to be swung out and down. The door framing consists of 2 1/4 x 2 1/4 x 1/4 in. angles with a centre vertical stiffener of 3-16 in. pressed plate at centre.

**CONSTRUCTION OF CAR ROOF**—The roof is of the camber type, having a carline radius of 15 ft. 6 15-16 ins. Carlines:—12 per car, including end carlines 2 1/4 x 2 1/4 x 5-16 in. angle, vertical leg being bent to form connection to side plate—in addition to plate connection—the other leg carried over side plate to support eaves. Roof boards laid longitudinally and secured direct to carlines. Roof covering of no. 22 gauge galvanized iron.

Regarding the 100 cars mentioned in the opening paragraph, the chief difference is in the accommodation for the brakeman. The principal dimensions and features that differ from the 1,200 cars are as follows:—

Height from rail to centre of buffers and draft gear at brake box end	3 ft.	4 25-32 ins.
Height from rail to top of brake box roof	13 ft.	1 29-32 ins.
Total length over main roof	23 ft.	9 27-32 ins.
Total length over main roof, including brake box	25 ft.	9 21-32 ins.
Inside dimensions—		
Clear length between end protection boards	23 ft.	3 17-32 ins.
Cubic capacity		1386 cu. ft.

The brake gear is operated by hand only from one end to brake mast provided with a spiral worm. This actuates a series of levers, all wheels being equipped with two each, combined brake head and shoe. Both kinds of car are equipped with footboards below each side door opening, brackets for

signals and lamps, end safety chains and suitable hooks and chains, etc., inside car for securing cattle or merchandise.

## List of Canadian Northern Pacific Railway Stations.

Following is a list of station points between Port Mann, B. C., and Yellowhead Pass, showing the mileage of each from New Westminster bridge and the altitudes. The class of station to be built is shown by the figures immediately after the names of the stations:—1 designates a special station; 2, a third class station; 3, combined station and shelter house; 4, section house; 5, shelter; 6, future siding; D. p., division point:—

Mileage.	Stations.	Altitudes.
4.0	Port Mann, 1	16
10.7	Port Kells	26
14.7	Langley, 2	24
20.0	Glen Valley, 5	24
25.5	Mount Lehman, 5	31
30.5	Matsqui, 2	24
35.9	Sumas, 5	36
41.4	Arnold, 5	31
46.2	Chilliwack, 1	36
52.7	Rosedale, 2	52
57.0	Cheam	80
63.8	Riley, 3	101
68.2	Laidlaw, 3	96
70.0	St. Elmo, 5	106
73.9	Floods	119
77.5	Hope, 1	157
82.0	Trafalgar Bar	162
86.3	Squah	187
91.2	Yale, 3	220
99.7	Stout	282
105.3	Chapmans Bar, 3	355
118.3	Boston Bar, 1, D.p.	452
124.2	Boothroyd, 4	519
128.2	Inkitsaph, 6	568
113.5	Falls Creek, 4	606
139.5	Cisco	604
145.7	Lytton, 2	568
152.5	Gossett, 4	626
160.4	Seddell, 3	702
164.5	Skoonka	721
168.7	Spences Bridge, 2	740
174.5	Martel, 4	803
178.2	Minnabarriet, 6	854
185.0	Basque, 3	900
194.9	Ashcroft, 2	995
202.6	McAbee, 3	1,031
207.3	Anglesey	1,078
211.0	Walhachin, 3	1,086
218.0	Savona, 3	1,173
222.9	Copper Creek	1,171
230.0	Cox, 3	1,171
235.7	Tranquille, 3	1,183
244.0	Kamloops Jct., 1, D.p.	1,153
250.8	St. Paul, 3	1,172
258.3	Hefferley, 3	1,185
266.6	McLure, 3	1,188
274.8	Louis Creek, 3	1,232
285.1	Genier, 3	1,256
292.2	Chu-cha, 2	1,280
300.6	Boulder Creek, 3	1,289
309.3	Mosquito Flats, 3	1,310
315.0	Clearwater Crossing, 3	1,338
321.6	Birch Island, 3	1,394
330.0	Vavenby, 3	1,543
335.7	John Irvine, 3	1,638
345.8	McMurphy, 3	1,793
353.3	Wire Cache, 3	1,899
358.2	Avola, 3	1,903
364.6	Cottonwood Flats	2,008
369.5	Messiter, 3	2,082
375.2	Wolfenden, 3	2,179
379.0	Trout Creek, 6	2,196
383.3	Blue River, 1, D.p.	2,244
393.0	Thunder River, 3	2,265
401.6	Pyramid Creek, 3	2,315
409.2	Lempriers, 3	2,376
418.9	Clemina, 3	2,684
424	Albreda, 3	2,801
432.8	Canoe River	2,713
437.5	Cranberry, 6	2,648
443.5	Swift Creek	2,603
450	Jackman	2,821
458	Morey	3,056
464	Mount Robson	3,241
470	Resplendent	3,415
478	Rainbow	3,396
485	Grantbrook	3,451
494	Lucerne, 1, D.p.	3,647
499	Yellowhead	3,708

We are indebted to T. H. White, Chief Engineer, Canadian Northern Pacific Railway, for the foregoing.

The Inn, St. Andrews, N.B., which closed for the season on Sept. 15, will not be operated as one of the Canadian Pacific Ry.'s hotels in future. The C.P.R. will, of course, continue to operate the Algonquin Hotel, St. Andrews.



# Canadian Pacific Railway Terminal Improvements at Quebec.

The entire remodelling and extension of the C.P.R. passenger and freight facilities on the Palais grounds at Quebec became necessary some little time ago on account of the normal growth of business, and to their proposed use by both the C.P.R. and the National Transcontinental Ry. as a union terminal. The work which is shown on the accompanying plan was started dur-

and will stub-end toward the extension of Ramsay St. The common working and set off tracks for this yard and the wharf tracks will be built between the two and connect with the main tracks well to the west, in order to reduce to a minimum the interference of freight movements with the throat of the passenger station yard.

The new freight sheds are complete and

baggage, mail and express facilities in the west wing.

The station yard will include for the present eight stub end tracks, varying in capacity from 7 to 10 cars and a locomotive, and three through tracks varying from twelve to fourteen cars and an engine. The through tracks are provided for handling pilgrimage trains which run through to



Canadian Pacific Railway Freight Terminals in the City of Quebec.

The building to the left, at the rear of the office building, is the inbound freight shed; the building to the right is the outbound freight shed.

ing the summer of 1914, and is being carried out in such a manner as to keep all facilities in full service. The construction of the new freight facilities released the old ones; these were demolished to make room for the new passenger station, and when that is completed the existing station will be removed to permit of the construction of the passenger car yard. It is intended to have the work all completed by the summer of 1917.

in service. The outbound shed is 30 ft. wide and 360 ft. long, and the inbound shed proper is 50 ft. wide and 460 ft. long, the balance of its length being given over to a 2-story office building. Each shed is served by three tracks, the outbound having a capacity of 27 cars, and the inbound a capacity of 39 cars, while a trucking platform between the two sets of tracks permits of their ready use for less than car lot transfer purposes. The sheds are so

St. Anne de Beaupre, and for such trains as may at some future time run through to the National Transcontinental Champlain Market Station by this route.

The tracks are arranged in pairs at 13 ft. centres, with 18 ft. combination baggage and passenger platforms between pairs. The southerly track will be reserved for handling car load baggage and express business. Space has been left for future additional tracks between the present stub tracks and



Canadian Pacific Railway Freight Terminals in the City of Quebec.

The building to the left is the inbound freight shed, the office building is in the centre of the illustration, and part of the outbound freight shed is shown at the right.

The track leading to the Louise Embankment and the Empress Wharves is to be relocated some 400 ft. to the north, partly on ground reclaimed from the St. Charles River. This will give a more direct route to the waterfront, and also permit of constructing the new team yard in such a position that teams need not cross the heavy train movement to and from the wharves. This team yard, of about 105 cars capacity, will also be built on the reclaimed ground,

located that they may at any time in the future be increased in length as more capacity is required.

The new passenger station, which is under construction, is located on the site of the old freight sheds. The ticket offices, baggage checking counters, and similar public facilities will be located in the portion of the building fronting on the proposed plaza. The waiting rooms and accessories will be in the north wing, and the

the baggage wing of the station, and between the through tracks and the freight sheds.

The passenger car yard stub ending toward St. Paul St. will have a capacity of 130 cars. Its construction has not yet been started, as it will be on the site of the present station and station yard. The heating of this yard, the station and station yard and the freight sheds will all be handled from a central power house located just



## Canadian Pacific Railway Passenger and Freight Terminals in the City of Quebec.

A preliminary report issued at Washington, D.C., from Lieutenant Means, a member of the Alaskan Railway Engineering Commission, gives details of the work done since April 26, when the staff arrived at Sharp Creek, Alaska. A dock equipment with a 15 ton stiff leg derrick was built at Sharp Creek for the unloading of freight. The dock was finished to enable the first cargo of lumber to be discharged May 26. The report continues: "We have now contracted with about 40 stationmen and are now employing about 100 men on force account handling the terminal work and constructing wagon roads. I expect to increase this force to 1,500 or 2,000 men as fast as material and supplies can be shipped in."

For the foregoing information and the accompanying ground plan we are indebted to J. M. R. Fairbairn, Assistant Chief Engineer, Eastern Lines, C.P.R. For the photographs of the freight terminals we are indebted to the W. S. Downing-Cook Co., Montreal, who were the contractors for the freight sheds and office building and also have the contract for the passenger station. D. H. Mapes, Engineer of Buildings, C.P.R., was in charge of construction of the freight buildings and also has charge of the passenger station construction.



# Fuel Consumption on Locomotives.

By T. C. Hudson, Division Master Mechanic, Canadian Northern Railway, Joliette, Que.

The following paper was read at a C.N.R. staff meeting in Quebec recently:

The year 1914 will be recorded in history as one of the most disastrous in recent times. We in this country, although far from the actual seat of war, have felt the effects. The demand for inland transportation the year round has brought into existence three great transcontinental railways, each of which is practising the strictest economy in maintenance, and operation consistent with efficiency.

Coal consumption, being one of the largest operating items of expense, has engaged the attention of railway officials in the past, and is still a warm subject of discussion. It is not my intention to deal with the question of mining, inspecting, transportation, or storage of coal, save to remark in passing it is obvious that a railway purchasing a large quantity of any material should have it given proper inspection by a man familiar with the product. The officer in charge of fuel, in order to get the best results, should co-operate with the operating officials, the mechanical department in particular, as this department consumes about 90% of all coal brought on the line. Where large storage plants are located, the engineering department can assist in reducing the cost of coal by providing the most economical plant to handle it from dump to tender. On a young and growing road this is sometimes difficult, as first cost must be considered and terminal defined, but this is bound to receive attention as maturity is reached.

When criticizing men and methods, we are all prone to forget that the whole world is a compromise. If we take as an instance the supreme law making body of the country we find it to consist of a parliament of men elected by the people, some of whom develop exceptional ability, some average, others are below average, yet all members other than cabinet ministers receive the same salary for service given. It is somewhat the same in railway operation. When we wish to ascertain the efficiency of the men who handle the coal and the locomotives we should compromise between the good and the poor, and find the average. Progress will be marked in so much as we are able to improve this average. This brings us to the question of what can be done to reach this end. Best results are obtained, when all operating officers, from the general manager down, take interest in this matter, and co-operate with the superintendent of motive power, or master mechanic responsible for the supervision and maintenance of locomotive equipment.

The instruction of locomotive men in the proper methods of firing and handling the locomotive is of great importance. The master mechanic should see that the money allowed for supervising and instructing the men is used to the best advantage. He should become thoroughly imbued with the spirit which animated that grand old pagan Seneca, when he remarked, "He that cannot live happily anywhere, will live happily nowhere." Thus fortified he may do effective missionary work. He should keep in personal touch with the men as far as possible, and it will be found beneficial to meet them in a body from time to time to discuss road service matters of economy, and while handing out suggestions he should keep a receptive mind for those offered which may be of practical use. This will create a keener interest and a better understanding toward fuel economy, for after all the men have no way of ascertain-

ing the aim and policy of the company in this matter, excepting through its officials.

Some years ago we got out a series of questions and answers on what we considered good practice. These were used by the road foremen when preparing firemen to pass as locomotive men. Changes and improvements have necessitated the adoption of a more complete treatment on this subject, therefore we have had printed and issued to the men a 1st, 2nd and 3rd series of questions and answers. These are not the opinion of any one man, but are what is considered the best combined thoughts of practical men throughout the continent on this subject.

About a year ago I instituted a system of receiving practical suggestions, tending toward any matter of economy, from the various leaders under my supervision. We are now carrying this further by inviting the rank and file to hand in any suggestions which may create a saving, our object being to make the men feel they are a part of the organization. The master mechanic should select road foremen or travelling locomotive engineers who have ability for the work and energy to apply it. The men selected should be allotted to territory which will permit them to ride on each locomotive at least once a month. They should work in close touch with trainmaster and dispatcher, and assist them in obtaining good road service. I think this is best obtained by allowing each road foreman to devote his time to the men and locomotives on his district, so he may see that the locomotive men and firemen understand their duties, and are following the instructions given them in regard to the proper method of handling and firing locomotives. He should fill out and forward promptly to the master mechanic's office the form furnished, entering on it any defects observed which would prevent the locomotive giving good road service. He should assist the superintendent in cases of discipline, and report to the master mechanic work performed.

Experience has taught me that it is rare that a traffic blockade occurs where the trainmaster, road foreman, and locomotive foreman work in harmony: this unity of purpose assists in keeping down fuel costs. It is the practice to issue a monthly performance sheet showing miles run to one ton of coal, and ton miles per ton of coal. To be of benefit care should be taken to have these as correct as possible, only coal used in service being noted against the mileage and performance of the locomotive; a separate rendering should be shown of coal consumed by the locomotive where no heated shop is provided, and where it must of necessity be kept under steam, and at times maintain heat in coaches, also where soft coal is used to heat shop plants, stations, conductors' vans, steam shovels, pile drivers, or for any other purpose. Where scales for weighing coal are not available, we have found by using the shovel as a unit we are able to ascertain the consumption on the trip very closely, no. 4 shovel carrying about 15 lbs., no. 2 shovel, used on smaller locomotives, slightly over 13 lbs.

The quantity of fuel consumed varies with different conditions on trains, grades, speed, and locomotives. Exact comparisons are impossible unless we know all the conditions, which is not often the case. However, we can compare men and locomotives on similar trains where the schedule is the same, and where an equal tonnage in passenger or freight cars is handled. We re-

ceive a statement each week showing any locomotive failures. It might be beneficial to show unavoidable detentions on the road, which are attributed to the locomotive, and for which, in order to make up and take the train into the terminal on time, the locomotive must burn more coal.

A record on the ton per mile per hour basis would in such cases give credit to the men and the machine. There died six years ago a man who fired the Rocket for George Stephenson. We can mark the great progress which was, during his lifetime, made by the mechanical men in developing the locomotive for the various classes of work, until today it is one of the most effective machines in existence, requiring great care and the prompt reporting and handling of repairs. With the installation of the pneumatic bell ringer and pneumatic fire door, the fireman is now permitted to give more attention to the actual feeding of coal to the firebox.

The successful development of the superheater and application of the brick arch have greatly reduced coal consumption. In order to get most benefit from high degrees of superheater steam, it is necessary to have all tubes bored and clean, and foremen and engineers should be on the alert to note any leaks in superheater units. Cylinder packing, piston rings, and piston valve rings should be kept in good condition. We favor the proper maintenance of the brick arch. The storekeeper by having a stock on hand is assisting to keep down fuel costs. Foremen assist in fuel saving by keeping an eye on the ashpit to see that coal is not wasted when fires are knocked, and by having instructions carried out regarding the overloading of tenders, as coal is expensive ballast. Roadmasters and bridge and building masters are saving coal by instructing their men in proper use of flags, so as to avoid unnecessary delay, as it costs about 300 lbs. of coal to stop and start one of our passenger trains when running about 50 miles an hour, and freight trains in proportion. The speeding of freight trains should be avoided, except in very special cases.

The superintendent who is keeping his freight movements under an average of 13 miles an hour, with a maximum of 25 miles per hour, and who has a dispatcher endeavoring to get trains over the road by avoiding station detentions as much as possible, and by loading to a maximum economical limit, and no more, is going a long way toward fuel economy. Watchmen, by preventing pilfering, and who educate the public that the company's coal is not common property, will save considerable fuel. The car department, in giving inspection to cars, materially assists in lowering fuel costs. Trainmen save coal by keeping locomotive men posted regarding work to be done along the road, thereby permitting the fire to be regulated accordingly. The agent who gauges closely the time at which trains will be ready to leave the yard, and orders locomotives to correspond, is preventing fuel waste. The call boy, by calling crews promptly, thus avoiding terminal delay, is adding his quota. With hearty co-operation and keeping everlastingly at it good averages will be obtained.

The Canadian Pacific Ry. has introduced on its dining cars a buffet, on which cold meats, salads, etc., are displayed under glass covers, giving passengers an opportunity to make a selection, the serving being done by an attendant in white uniform.



# Railway Mechanical Methods and Devices.

## Twin Tell-Tale Hole Drilling Machine at Pere Marquette Railroad Shops.

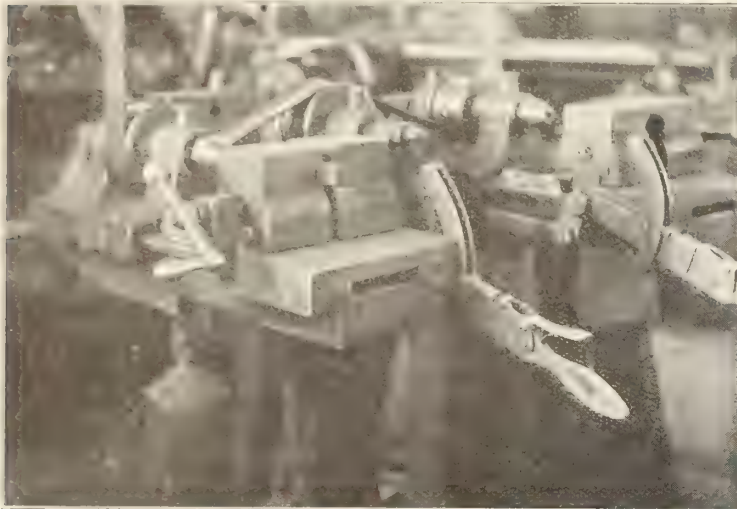
The P.M.R. shops at St. Thomas, Ont., have in use a tell-tale hole drilling machine for drilling tell-tale holes in staybolts, which is illustrated herewith. It is of the twin type, each machine alike in

## Wheel Lathe Features in Grand Trunk Railway Shops.

On the passenger car wheel lathes in the G. T. R. shops at Stratford, Ont., there are several interesting departures in the equipment for expediting the work, four of which are shown in the accompanying illustra-

tion at d. The wheels to be turned are brought in on the entry track, raised by the jack a, moved forward on the latter until in a position to be lowered on the elevated rails c, rolled into the lathe chuck, the inner ends of the elevated rails raised, when the journals can be chucked, and the machine set up as usual.

The tools are chucked in an air chuck



Twin Tell-tale Hole Drilling Machine.



Fig. 1.—Mounting Wheels in Passenger Car Wheel Lathe.

all particulars. The two parts are mounted on a cast iron frame, and both are driven from a common belt, running over a spindle pulley and intermediate idler wheel. The head is similar in construction to that of a light lathe. On the near end are carriages, each equipped with a double vise jaw, operated by a cross screw and handle. A weight suspended from the under side feeds the carriages forward automatically, and

tions. For mounting the wheels in the lathe for turning, the arrangement shown in fig. 1 is employed on one of the lathes. The whole floor in front of the lathe is laid with steel plating, with rails leading up to within about 8 ft. of the lathe as shown in the foreground. Between the tracks there is the travelling pit jack a, which moves in a floor channel covered by the plate b, which travels with the jack. The limits of

of somewhat different design from the commercial pattern of air chuck, and which was made in the shops. The chuck consists primarily of an air cylinder a, mounted on a bracket on the rear of the tool carriage as shown in fig. 2. On the front of the tool stand there is a heavy screw and nut b, bearing down on a clamp c. The latter is prevented from dropping when the tool d is not in position, by the coiled spring

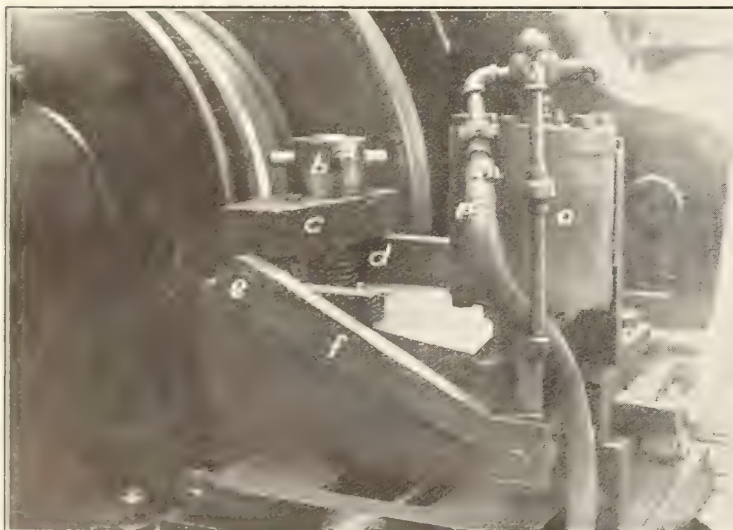


Fig. 2.—Air Clamp for Tools in Passenger Car Wheel Lathe.



Fig. 3.—Tools for Tire Turning in Passenger Car Wheel Lathe.

when the drill has entered to the correct depth, the carriage is run back by hand by means of the handle on the quadrant, and is locked in the back position by a finger on the quadrant, when the staybolt is inserted. It is then released, and the carriage feeds forward, the one operator being kept busy feeding one head while the other is drilling, so that the process is practically continuous.

The jack movement are from a position over top of the far end of the entry tracks, and the near end of the elevated tracks c, which are T iron sections, hinged at the near end on pedestals d, the far ends terminating on the other side of the centre line of the lathe. In the bed of the lathe under the end of these rods there is an air cylinder by means of which the elevated track may be raised or lowered, pivoting about the

around the bolt b under the clamp c. Under the near end of the clamp c there is a short rod e, on the far end of which there is a small cam, bearing up against the under side of the near end of the clamp c, and actuated from the air cylinder through the lever f. The introduction of the cam and rod in conjunction with the air cylinder is a novel departure from the usual air clamp design with the air cylinder directly under



the end of the clamp, with the latter fulcrumed.

The set of tools used on the passenger car wheel lathe is shown in fig. 3, which, it will be observed, shows the set for both ends of the lathe. The practice in these shops is to use formed tools of high speed steel mounted on soft steel bodies as shown, with the exception of the roughing operation, performed with a plain forged tool. The first operation with the plain forged tool is to rough to approximate shape, with the two tools like a. The flange is then formed with tools b, the tools being fed in until the correct thread diameter is given on the wider portion of the face of the tool. The treads are then formed with the tools x, feeding in the tread diameter set in the previous operation. The final cuts are made with tools d, heeling the tread, finishing in this operation to the M. C. B. wheel gauge, when the wheels are completed. The production averages about a pair of wheels per hour. With the use of the tools shown, a considerable saving in steel results. The soft steel bodies are recessed on the forward end, into which the high speed steel cutters are set by screws. The tools are ground to shape,

be secured. The whole arrangement is very rigid, with little chance for errors to creep in.

### Wheel Lathe Driver in Michigan Central Railroad Shops.

The accompanying illustration shows a handy wheel lathe drive as used in the M. C. R. car shops at St. Thomas, Ont. They are used in pairs, diametrically opposite each other on the face plate of the lathe, the driving pin entering the core holes in the outer face of the wheels. Each driver consists of a base casting, bolted to the face plate, and carrying a square headed swivel pin, through the head of which passes a swivel bolt. A pin through the opposite end of the latter passes into the holes in the driving wheel. Such a driving mechanism is handy for wheel work, as so many wheels are placed in and taken out of the lathe in the course of the day that any small saving in time means much in the ultimate economy. From the arrangement of holes in the base casting, the position of the drive may be varied to suit varying sizes of wheels.

sired point. E shows the staple former die which is bolted to the shaper table. D shows the former, which is held in the tool post holder, at each stroke of the shaper head, this forms a staple over die E. Upon completion of the staple it drops on the incline plane below and is carried into a receptacle. A barrel which has been filled with these staples is shown on the left. We



Automatic Wire Staple Bending Device.

are indebted to G. E. McCoy, Assistant to Chief Draughtsman, Canadian Government Railways, Moncton, for the foregoing information.

### Air Hammer in a Blacksmith Shop.

By W. S. Bazole, Master Mechanic, Rapid Transit Subway Construction Company, New York.

The accompanying illustration shows an air hammer in use in our blacksmith shop: It consists of an E52 Ingersoll-Rand reciprocating drill, from which the piston has



Air Hammer for Blacksmith Shop Work.

been removed and the chuck turned to a taper to fit the block used as the hammer. The tapered end of the piston is inserted in this block and driven home, using two set screws to fasten it. There is a square plate under the front head, which is not necessary as this hammer was originally used for driving sheet piling. The rotation



Fig. 4.—Calipers for Passenger Car Wheel Lathe.

and correctly backed off to shape, so that they may be used a very long time with only a grinding on the upper face from time to time.

It was formerly the practice in these shops to caliper all wheels with the pointer from the cross bar above the lathe. This method is accurate if nothing happens to disturb the position of the crossbar. Trouble was experienced on this score, with discrepancies in the diameters of the pair of wheels, with the result that this method has been abandoned for final measurements, the cross bar only being employed for the roughing stages. The calipers used for the final work are shown in the accompanying fig. 4. They consist of two curved arms of the usual shape, secured together by a screw, the latter with a tightening handle for rapid and accurate adjustment. In the ends of the arms are bearing pins, one of which is stationary, with the other adjustable, consisting of a small knurled headed screw with locking nut, passing through the end of the arm. Through this screw final adjustments may



Wheel Lathe Driver.

### Automatic Wire Staple Bending Device in Intercolonial Railway Shops.

The accompanying illustration shows a device designed in the Intercolonial Railway shops, Moncton, N. B., for making wire staples on a shaper. The staples made are about 7 ins. long, 2 ins. wide, are made of 1/8 in. galvanized wire, and are used as roof board locks on box cars. By the mechanism shown the staples are formed in a very complete manner at the rate of about 500 an hour.

A shows a holder on which is mounted the coil of wire, the latter on unwinding from coil, passing through a straightener B, which is supplied with 5 steel rollers to straighten and remove all kinks from wire. At each stroke of the shaper head the clutch C grips the wire and draws it forward until the end strikes stop F. At the point G a cutter is placed and so arranged that it engages with projecting arm on shaper head, at each forward stroke of shaper head, cutting the wire at the de-



pawls are removed from the machine so that the hammer does not revolve. An old anvil is used for the hammer to strike on, which the writer suggests is not a very good scheme, as owing to the speed of the hammer, the anvil requires to be fastened very tight, as there is more or less a rocking condition. It would be well to have a heavy square casting placed on a good foundation. As will be observed, the drill

is bolted to a 14 x 14 in. yellow pine stick, concreted 4 ft. in the ground. This hammer will operate either by steam or air, and for small work is very successful. In our shops recently the blacksmith had occasion to make some 1½ in. square rock wedges, turning out one a minute with a long taper. For welding small irons or steel this hammer is ideal, saving the blacksmith's helper many blows.

## Birthdays of Transportation Men in October.

MAJOR EVENTS of the day to:

E. W. Beatty, K.C., Vice President and General Counsel, C.P.R., Montreal, born at Thorold, Ont., Oct. 16, 1877.

L. S. Brown, Superintendent, Truro, Sydney and Oxford District, Intercolonial Ry., New Glasgow, N. S., born at Nelson, N. B., Oct. 19, 1864.

R. A. Burford, cashier, C.P.R. ticket office, New York City, born at Brooklyn, N.Y., Oct. 4, 1878.

G. E. Burns, Freight Claims Agent, Eastern Lines, C.P.R., Montreal, born at St. Thomas, Ont., Oct. 6, 1863.

K. J. Burns, Assistant General Freight Agent, Great Northern Ry., Vancouver, B.C., born at Rochester, Eng., Oct. 11, 1878.

F. F. Busted, C.E., formerly Engineer in charge of C.P.R. revision and second tracking, west of Calgary, Kamloops, B.C., born at Battery Point, Que., Oct. 10, 1858.

J. M. S. Carroll, District Manager, Canadian Consolidated Rubber Co., Montreal, born at Ballarat, Australia, Oct. 22, 1877.

C. E. Cartwright, M. Can. Soc. C.E., ex-Division Engineer, C.P.R., Vancouver, B.C., born at Toronto, Ont., Oct. 13, 1864.

G. S. Cooke, Superintendent Grand Trunk Pacific Ry., Melville, Sask., born at Montreal, Oct. 27, 1875.

A. F. Dion, Traffic Agent, Quebec Harbor Commission, Quebec, born at L'Islet, Que., Oct. 1, 1871.

L. V. Druce, Commercial Agent G.T.R. and G.T.P.R., Vancouver, B.C., born at London, Eng., Oct. 20, 1873.

C. E. Dewey, Freight Traffic Manager, G.T.R., Montreal, born at Cheshunt, Eng., Oct. 2, 1873.

C. E. Friend, General Auditor, Canadian Northern Ry., Winnipeg, born at Brighton, Eng., Oct. 12, 1871.

W. P. Fitzsimmons, Commissioner of Industries, G.T.R., Montreal, born at Detroit, Mich., Oct. 27, 1868.

G. Hodge, Assistant to General Manager, C.P.R., Montreal, born there Oct. 2, 1874.

J. H. Hughes, Assistant Superintendent, District 4 Eastern Division, C.P.R., Ottawa, Ont., born at Charlottetown, P.E.I., Oct. 7, 1865.

H. Irwin, M. Can. Soc. C.E., Consulting Right of Way and Lease Agent, C.P.R., Montreal, born at Newgrove, County Down, Ireland, Oct. 27, 1847.

J. W. N. Johnstone, General Passenger Agent, Reid Newfoundland Co., St. John's, Nfld., born at Campobello, N.B., Oct. 4, 1878.

W. M. Kirkpatrick, Assistant Freight Traffic Manager, Eastern Lines, C.P.R., Montreal, born at Kingston, Ont., Oct. 8, 1874.

W. B. Lanigan, Assistant Freight Traffic Manager, Western Lines, C.P.R., Winnipeg, born at Three Rivers, Que., Oct. 12, 1861.

J. W. Leonard, General Manager, Toronto Terminals Co., Toronto, born at Epsom, Ont., Oct., 1858.

Sir William Mackenzie, President, Canadian Northern Ry., Toronto, born at Kirkfield, Ont., Oct. 30, 1849.

C. Malcolm, chief clerk, Auditor of Stores and Mechanical Accounts, Alberta Division, C.P.R., Calgary, Alta., born at Tatamagouche, N.S., Oct. 18, 1881.

W. T. Marlow, Import Freight Agent, C.P.R., Montreal, born at Limerick, Ireland, Oct. 25, 1872.

R. Marpole, General Executive Assistant, C.P.R., Vancouver, B.C., born in Montgomeryshire, Wales, Oct. 9, 1850.

Hugh Paton, President, Shedden Forwarding Co., Montreal, born at Johnstone, Renfrew, Scotland, Oct. 5, 1852.

J. W. Porter, Chief Engineer, Hudson Bay Railway, Winnipeg, born at Aberdeen, Scotland, Oct. 15, 1877.

D. Pottinger, I.S.O., ex-Assistant Chairman, Government Railways Managing Board, Moncton, N.B., born at Pictou, N.S., Oct. 7, 1843.

H. G. Reid, Master Mechanic, Saskatchewan Division, C.P.R., Moose Jaw, born at Pembroke, Ont., Oct. 27, 1863.

W. S. Rollo, joint agent, G.T.R., and Central Vermont Ry., St. Johns, Que., born at Dundee, Scotland, Oct. 8, 1852.

J. K. Savage, Superintendent, District 1, Saskatchewan Division, C.P.R., Regina, born at Forrester, Ill., Oct. 5, 1876.

Sir Thomas G. Shaughnessy, K.C.V.O., President, C.P.R., Montreal, born at Milwaukee, Wis., Oct. 6, 1853.

T. Duff Smith, Fuel Agent, Grand Trunk Pacific Ry., Winnipeg, Man., born at Barking, Essex, Eng., Oct. 2, 1868.

A. B. Spence, Travelling Auditor, Reid Newfoundland Co., St. John's, Nfld., born at Harbor Grace, Nfld., Oct. 21, 1882.

F. Stamelen, Night Locomotive Foreman, C.P.R., Winnipeg, born at Chatham, Ont., Oct. 16, 1863.

E. Sterling, Superintendent Districts 2 and 3, British Columbia Electric Ry., New Westminster, born at Thornbury, Ont., Oct. 3, 1875.

C. E. Stockdill, Assistant to Vice President and General Manager, Western Lines, C.P.R., Winnipeg, born at London, Ont., Oct. 25, 1881.

E. N. Todd, Division Freight Agent, Eastern Division, C.P.R., Montreal, born at Huntington, Que., Oct. 17, 1879.

A. W. Wheatley, Manager, Canadian Locomotive Co., Ltd., Kingston, Ont., born at Ashford, Kent, Eng., Oct. 12, 1870.

**Railway Lands Patented.**—Letters patent were issued during June respecting Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:

	Acres.
Calgary and Edmonton Ry. ....	3.61
Canadian Pacific Ry. ....	25.14
Canadian Pacific Ry., roadbed and station grounds ....	.39
Qu'Appelle, Long Lake and Saskatchewan Rd. and Steamboat Co. ....	1,438.00
Total .....	1,467.14

**The Canadian Overseas Railway Construction Corps**, when last heard from, were at Longmoor Camp, Huntingdonshire, Eng., where they were said to be engaged in revising the location of some of the railway lines in the vicinity. Lieut. Col. Ramsey and Major Hervey were said to have gone to France and Belgium to look over some of the ground of their future work.

The G.T.R. has built four box cars at its Elsdon shops, Illinois.

## Stock Cars for Edmonton, Dunvegan and British Columbia Railway.

The Edmonton, Dunvegan & British Columbia Ry. has, as stated in Canadian Railway and Marine World for September, ordered ten stock cars from the National Steel Car Co., Hamilton, Ont.

The dimensions are as follows:—

Length over end sill .....	36 ft. 9¾ ins.
Length inside .....	35 ft. 10¼ ins.
Width over side sills .....	9 ft. 0¾ ins.
Width inside .....	8 ft. 4¾ ins.
Height top of sill to bottom of plate .....	7 ft. 10¾ ins.
Wheel base .....	5 ft. 2 ins.

The cars are of the wood frame type, the underframe consisting of 2 centre sills 4½ x 9, four intermediate sills 4 x 9, and two side sills 5 x 9 and which is further stiffened by 6 truss rods 1¼ in. passing under malleable iron struts and over cast iron saddles on bolsters. Truss rods are anchored on outside of deadwoods with nuts bearing on cast iron washers and on end sills on steel plates. The truss rod struts are attached to 4 x 11 oak needle beams, the whole secured to sills by ¾ in. bolts. Between bolsters and needle beam and between needle beams is a 5 x 5 in. sub sill bolted to centre sills. The draft sill is of oak 5½ x 8, which is provided with cast iron draft keys between centre sill and draft sill, and constructed to take tandem draft gear with 6¼ x 8 M.C.B. draft springs.

The side framing consists of two 2½ x 5 bolster posts, four 2½ x 4½ intermediate posts, 4 x 5 door post and eight 2½ x 5 braces. All posts and braces rest in cast iron caps and pockets set in side sill and side plate, the whole bound together by ¾ in. tie rods, passing through side plate and side sill. Side plates are of 3½ x 7 yellow pine extending full length of car in one piece and side door headers are of oak 4 x 5 ins. Side door rails and stiles are of oak 2 in. thick, having ½ in. steel bars set vertically in holes bored in top, bottom and centre rails and passing through the intermediate rails. Between door posts is a 1¾ x 7¾ guard rail resting in a cast iron pocket on each post and secured to one post by safety chain. The cars are provided with hay racks, running from end of car to door and designed to swing up to side of car. Sides of car from the eaves downward are lined to 2 in. below hayracks, the remainder of sides being provided with slats. End framing consists of 6 x 6 corner posts, 4 x 4½ end posts, and 4 x 5 braces, all of yellow pine, ends of posts and braces rest in cast iron caps and pockets. At end of car 5½ in. from floor is a swing door with 2 x 2 ft. opening. Beside each end post is a ¾ in. tie rod passing through end plate and end sill.

Roof consists of 1¾ x 10½ carlines of yellow pine cut to fit slope of roof and connected to side plate by ½ in. strap bolts. Ridge pole is 2 5-16 x 5 and purlines 2 x 3 both continuous full length of car. Between the two layers of 13-16 in. roof boards is laid one thickness of roofing paper. Ridge of roof is covered with a strip of galvanized iron 12 in. wide extending full length of car and fastened to roof with galvanized iron nails. Two ¾ in. tie rods pass through side plate.

The cars are fitted with Westinghouse air brake. Safety appliances are in accordance with Canadian Board of Railway Commissioners and United States Interstate Commerce Commission requirements. Trucks are of the arch bar type, with simplex bolsters and roller side bearings and cast steel centre plate. Journal boxes are of malleable iron, suitable for 4¾ x 8 journals. Brake beams are Damascus I-beam type, manufactured by the builders.



## The Death of Sir William Van Horne.

Following the operation on Sir William Van Horne at the Royal Victoria Hospital, Montreal, on Aug. 23 for an abdominal abscess, which was referred to in the last issue of Canadian Railway and Marine World, very encouraging bulletins were issued, as he appeared to have stood the operation well, and for some days he took ample nourishment and slept satisfactorily, but about a fortnight later a bulletin announced that his condition had changed for the worse, his temperature and pulse having risen considerably, and he gradually sank until he passed away on Sept. 11 at 2.10 p.m., surrounded by his family. To the general public the news of his changed condition came as a surprise, but to his family and to his immediate friends it was probably not unexpected, as owing to his condition of health when he underwent the operation grave apprehension was felt from the first. Until some two years ago Sir William enjoyed wonderfully robust health. A few hours after addressing the Canadian Club in Toronto on Nov. 17, 1913, he was taken ill and was laid up for some little time, but he improved materially and made trips to Cuba, besides spending considerable time at his summer home at St. Andrews, N.B. During the past summer his condition caused his family considerable anxiety, and at last, an operation becoming necessary, he was taken to the hospital hurriedly during the night of Aug. 22-23, and was operated on at 2.30 a.m. As stated above, his condition for some days was considered satisfactory, but diabetic conditions developed that rendered recovery impossible.

His funeral, which took place from his house, 513 Sherbrooke St. West, Montreal, Sept. 14, was a remarkable national tribute, the attendance including representatives of the Governor General, the Dominion and the Quebec Governments, Sir Thos. G. Shaughnessy, President, Geo. Bury, Vice President, a number of other directors and a very large number of C.P.R. officials, representatives of the judiciary, the professions, the transportation, banking, manufacturing and other commercial interests, and thousands of the masses. The funeral service in the great drawing room at 10 a.m. was of a very simple character, the pastor of the Church of the Messiah, of which Sir William was a member, reading passages from the Bible and an extract from Emerson's Threnody, treating of life and character and destiny. From the house to the Windsor St. Station the streets were thronged with people. First went four carriages filled with flowers, then the hearse, followed on foot by the only son, R. B. Van Horne, the little grandson, W. C. C. Van Horne, and Sir William's brother, A. C. Van Horne, of Joliette, Ill. Next came Sir Thomas Shaughnessy with R. B. Angus, followed by Sir Edmund Osler and C. R. Hosmer, George Bury and the other vice presidents and heads of departments, and hundreds of other representative citizens. At the station the body was placed on a special train, which left at 11 a.m., having on board R. B. Van Horne and his wife, A. C. Van Horne, and W. F. Lynch, who was for many years Sir William's private secretary, and is now Purchasing Agent of the Cuba Co. in New York. Lady Van Horne and Miss Van Horne, the only daughter, remained in Montreal. The train, which was run at moderate speed, reached Toronto at 8.35 p.m., where it was met by one of Sir William's oldest Canadian friends, who remained with those on board until it left again, about 9 p.m., and ran direct to Joliette, Ill., which was reached the next

morning at 10 o'clock. There it was met by Col. Fred Bennet, of Joliet, one of Sir William's oldest friends, and by a delegation of representatives of the oldest families of Will County, who had known Sir William as a boy there. He was buried in the family plot beside his father and mother. The C.P.R. general offices in Montreal were closed for two hours on the morning of the funeral service there and flags

Horne was elected mayor of Joliet and was that city's first executive. In 1954 cholera swept through the valley and Mayor Van Horne succumbed to the disease. Following the death of the father the mother located in another section of the little city. William was educated in the Joliet public schools, which he attended until 1857. He read every book obtainable, and drew crude maps of engines and of ships. One day he



Sir William C. Van Horne, K.C.M.G. From a photograph taken in 1897.

were half masted on the company's buildings from London to Hong Kong.

William C. Van Horne was born Feb. 3, 1843, in a little loghouse at a small crossroads settlement then called Chelsea, in the wooded country between Frankfort and Mokena, in Will County, Illinois, the son Cornelius Covenhoven Van Horne and Mary Minier Richards. The father was a lawyer of some local repute, but failing fortune compelled his son William to enter the service of a farmer at an early age. The boy hoed potatoes and curried horses, but thought of higher things. When the valley of the Desplaines became the great highway into Chicago, the Van Horne family moved to Joliet. In 1852 the elder Van

took up the study of telegraphy and soon was master of the Morse Code.

He entered the Illinois Central Rd. service as a cub telegraph operator in 1857. This was when the road was under General McClellan and Ackerman and other early-day managers. The new operator received \$40 a month, a munificent salary for a boy whose training had been bounded by the rail fences of an Illinois farm. It is said of him in those days: "He learned to fiddle a little and drum a piano, and, having a talent for drawing, he began to cultivate art. He once drew a caricature of General McClellan on the brown painted side of his telegraph station on the Illinois Central, which came near costing him his place. The picture represented General McClellan



in full regimentals, but in a dangerously undignified attitude."

In 1858 he entered the Michigan Central Rd. service. Here he served until 21 years of age, when he was appointed ticket agent and telegraph operator on the Chicago & Alton Rd. He was afterwards despatcher for three years, for one year superintendent of the telegraph and for three years divisional superintendent of the road. Rising in service, his merits became known, and in 1872 he was appointed General Manager of the St. Louis, Kansas City and Northern Rd. From there he went, in 1874, to the Southern Minnesota Rd. as its General Manager. The line was then in the hands of a receiver, but he extricated it from its financial difficulties. His success was rewarded by the presidency of the company. In 1878 he returned to the Chicago & Alton Rd., as General Superintendent, at the same time retaining the presidency of the other line. On Jan. 1, 1880, he was appointed General Superintendent of the Chicago, Milwaukee & St. Paul Rd., at that time the most extensive one in the United States. In the autumn of 1881, he was appointed by the directors of the Canadian Pacific Railway to take control as General Manager of what was then projected and has since become one of the greatest railway organizations in existence, and opened Western Canada to the world, and he entered on his new duties at Winnipeg, Jan. 1, 1882. His big brain, his intense personality, his tremendous energy, and his ready grasp of every railway problem made him even then a conspicuous figure among railway men.

Sir William's fame will rest chiefly upon the construction and organization of the C.P.R. system. He could not have succeeded without the support of Geo. Stephen and Donald A. Smith, afterwards Lord Mount Stephen and Lord Strathcona. Nor could they have succeeded without him. He had the faith that literally moved mountains. It is true that the Dominion Government gave the company millions of money and a vast land subsidy. But the cash was soon exhausted while the west was uninhabited, and the lands unsaleable. The problem of long and desperate years was to find the traffic upon which it could subsist.

The railway to the Pacific Coast was required to give effect to the terms under which British Columbia had entered Confederation in 1871. Ten years from that date was the time allowed for its construction. At the outset, the work was undertaken as a Government enterprise, but a multitude of delays occurred, until five or six years had passed without material progress in the work. Finally, the Government turned to the syndicate headed by George Stephen. By their original contract the syndicate undertook to form a company to build the road from Callander, a town near Lake Nipissing in Ontario, to the Pacific, and afterwards to operate it. The railway system of Eastern Canada had already advanced far up the Ottawa Valley, attracted mainly by the rapidly growing traffic from the pine forests, and it was from a point almost in connection with this system that the new C.P.R. was to be carried to the Pacific Coast, a distance of 2,550 miles. One section of 425 miles between Lake Superior and Winnipeg and another of 213 miles from Burrard Inlet, on the Pacific Coast, eastward to Kamloops Lake in British Columbia, were already under construction by the Government. This left 1920 miles additional to be completed.

On Feb. 15, 1881, the first sod of the new C.P.R. was turned, and before the end of the year 163 miles had been built on the prairie west from Winnipeg. By this time, however, the directors and their financial

agents in Europe had found that there were difficulties in the way of raising the requisite money. Opposition, secret and open, at home and abroad created a distrust of the undertaking, so that the holders of the charter were in the position of having a work on hand in which delay meant heavy loss and possible complications with the Government, while the money necessary to proceed with due speed was not forthcoming. Attention was called by the enemies of the road to the contract made with the Government providing for the completion of the uninterrupted line within ten years. They declared this was impossible as the formidable obstacles found along the north shore of Lake Superior could not be overcome in twice the stipulated length of time, and furthermore, that the north shore section would never be built because, they felt assured, other routes would in the meantime have come into being, rendering the construction around Lake Superior unnecessary.

It was at this juncture that the company secured the services of Mr. Van Horne as General Manager, and to his knowledge, zeal and industry must be ascribed the rapidity with which the work was pushed forward. Within a few weeks of his appointment Mr. Van Horne made his pres-

### Sir William Van Horne

Where shall those feet tread on the  
unknown way,  
That here explored, untiring, our  
dull sod?  
What shall that mind discover and  
survey  
Upon the illimitable fields of God?

Must we not feel that swift from star  
to star,  
From station unto station, that  
great soul,  
An emigrant, shall reach from worlds  
afar,  
Through wide flung portals, Being's  
perfect goal.

—Barry Dane, in Montreal Gazette.

ence felt. When the enemies of the road began to decry the building of the section north of Lake Superior, he promptly declared for the retention of the original plan, and insisted that an all-Canadian line was absolutely necessary. He plunged into the work with all the strength of his iron nature. His first task was to attack the wilderness on the north of Lake Superior. Twelve thousand railway laborers and from 1,500 to 2,000 teams of horses were set to work, involving the use of a dozen steamboats for the transport of material and provisions. The problem boldly faced by the new General Manager was one calculated to daunt the most venturesome and daring spirit. In his preliminary and personal survey he had found what he afterward characterized as "200 miles of engineering impossibilities." The country it was necessary to cross was a waste of forest, rock and muskeg, out of which almost every mile of road was hewn, blasted or filled up, and in places the filling up of muskegs proved to be a most difficult task. There were moments during the work when even Mr. Van Horne's stout heart almost failed him. Discouraging reports from surveyors and engineers, the discovery of unexpected obstacles, and the varied phases of weather, rain following cold and floods following rain, made the task hard beyond the comprehension of ordinary men.

The Manitoba boom of the early eighties collapsed. There was failure of crops and an attenuated stream of immigration. Prices were low and settlers despondent. Wrong methods of agriculture had been attempted. The settlers from older Canada had no knowledge of prairie farming. There were failures through ignorance, through bad selection of lands, through unwise choice of seed, through unfavorable seasons. The emigration even of Canadians was to the Western States. The immigration from Great Britain was insignificant. In Europe, Canada was unknown, or known only as a British colony of supposedly inhospitable climate and broken by great barren areas. Moreover, the railway's credit was assailed in Europe. Its shares fell to 35%. It was embarrassed by ruthless criticism in Parliament. As originally projected, the railway could not possibly have lived through this period of national stagnation and political attack. Even as it was, the enterprise had to go again and again to the Government for relief.

In the very crisis of its history, when Lord Mount Stephen and Lord Strathcona had pledged their private fortunes to support its credit, Sir John A. Macdonald was only induced by desperate and persistent persuasion to give the aid necessary to avert certain bankruptcy. He was led finally to this decision by the late Hon. Frank Smith, a shrewd and courageous Irish Catholic public man of great wealth and much personal influence, who, seeing clearly the political and national effects which must follow failure of the great enterprise, at length impressed his conviction upon the Government. [Another reference to this crisis will be found further on in this article.—Editor.]

This was the turn of the wheel. Henceforth the road lived upon its own resources, or at least upon the resources of its management. It was the pride of Mr. Van Horne that the pay car never failed to make its regular trip, but at that time there was only a few hours between relief and disaster.

From start to finish, nothing could daunt Van Horne. There was that in the old Dutch stock of the Van Hornes which caused him to hammer away at the problem until he finally succeeded. If he had accomplished nothing else, his victory over the engineering difficulties afforded by the line along Lake Superior's north shore would give him fame enough for one man. While the work of constructing the Lake Superior north coast line was progressing, other portions of the great system were receiving the attention of the tireless General Manager and his assistants. The Rocky Mountains, that formidable barrier of interminable snow peaks, had to be pierced. The obstacles presented along Lake Superior faded into insignificance when compared with those encountered after entering the majestic Rockies and Selkirks. Every conceivable engineering problem was encountered and overcome. Trestles, bridges, cuts, fills and tunnels without number were employed, and to achieve all this money was spent with a liberal hand. It was like campaigning in a hostile country. To rout the forces of nature called for a vast army of men, and this army required a commissary corps as efficient as one accompanying a military body. Pick and shovel, dynamite and blasting powder, formed the weapons of offence; temporary rails and locomotives the transportation; great hordes of laborers the rank and file; intrepid and skilful Canadian and American engineers the staff, and at the head of it all, the General-in-Chief was William Van Horne.

He certainly roughed it in those early



days. It was thrilling when he described his nights on the plains in a pouring rain, sleeping on a wet mattress on the ground, "with the water oozing from the blankets over us, the steam rising like fog from our bodies, and in that way we got many a good steam bath and came off none the worse for the experience."

It is related that sometimes after night-fall the strains of some classic aria would float out over the wild mountain passes. The laborers knew what that meant—that the Big Chief was satisfied with his day's work and was expressing his satisfaction in music on his violin.

Practically every foot of the mountain division of the road was contested and probably every mile of tunnel and track was sealed with the blood of man. The bridging of fathomless chasms and the piercing of many mountains were accomplished only after herculean labor. There are bridges on this mountain division that hang in air—mere spider webs of iron—300 and odd feet above the river they span. There are places where masonry is plastered, so to speak, against the solid rock of mountains. There are ledges midway between heaven and earth, and elevations where the whirling trains plunge headlong into clouds and deep, cool ravines where the roadbed disputes with the darkness the realm of mysterious mountain torrents. There are miles of tunnels and bridges without number. On the mountain division alone the exigencies of the winter season caused the construction company to build 32 miles of snow-shed, and that at the enormous cost of \$64 a lineal foot. Over \$10,000,000 expended as a preliminary precaution against snow.

While the mountain division was carried through, the Government's contractors had finished certain other portions of the road, enabling the C.P.R. to take possession in conformity with the terms of the contract, and to connect the Pacific portion of

the line with that coming from the east. Finally, one rainy day, Nov. 7, 1885,—five and a half years before the time allowed by the terms of the charter,—a party of men associated in the great enterprise assembled in the little settlement of Craigellachie, in the Eagle Pass, B.C., and one of their number, Donald A. Smith,—drove the last spike of the connecting rail, thus establishing a railway from ocean to ocean within Canadian territory. Mr. Van Horne was, of course, one of the party. Before nightfall of that eventful day Queen Victoria sent a telegram to the Governor-General of the day, the Marquis of Lansdowne, congratulating the Canadian people on this national achievement, which Her Majesty regarded as "of great importance to the whole British Empire."

It was the policy of Sir William that enabled the company to survive the hard period of construction and the lean years that followed. Upon its local traffic the line could not exist. Hence he set himself with amazing energy to secure branches in the older provinces, to organize a fleet of steamships on the Lakes and a service on the Pacific. This gave the main line feeders and through business, while the very energy of the management astonished its rivals and greatly impressed the country.

Upon the retirement of the late Duncan McIntyre, of Montreal, as Vice President, Mr. Van Horne took that office, May 14, 1884, and on the retirement of Sir George Stephen, he became President on Aug. 7, 1888.

On May 24, 1894, he was created a Knight Commander of the Most Distinguished Order of St. Michael and St. George, by Queen Victoria, in recognition of his great services to the Dominion and to the Empire in providing the great all-British highway to the Orient by way of Canada.

As President of the C.P.R., Sir William gained a wide acquaintance throughout America. Although for many years en-

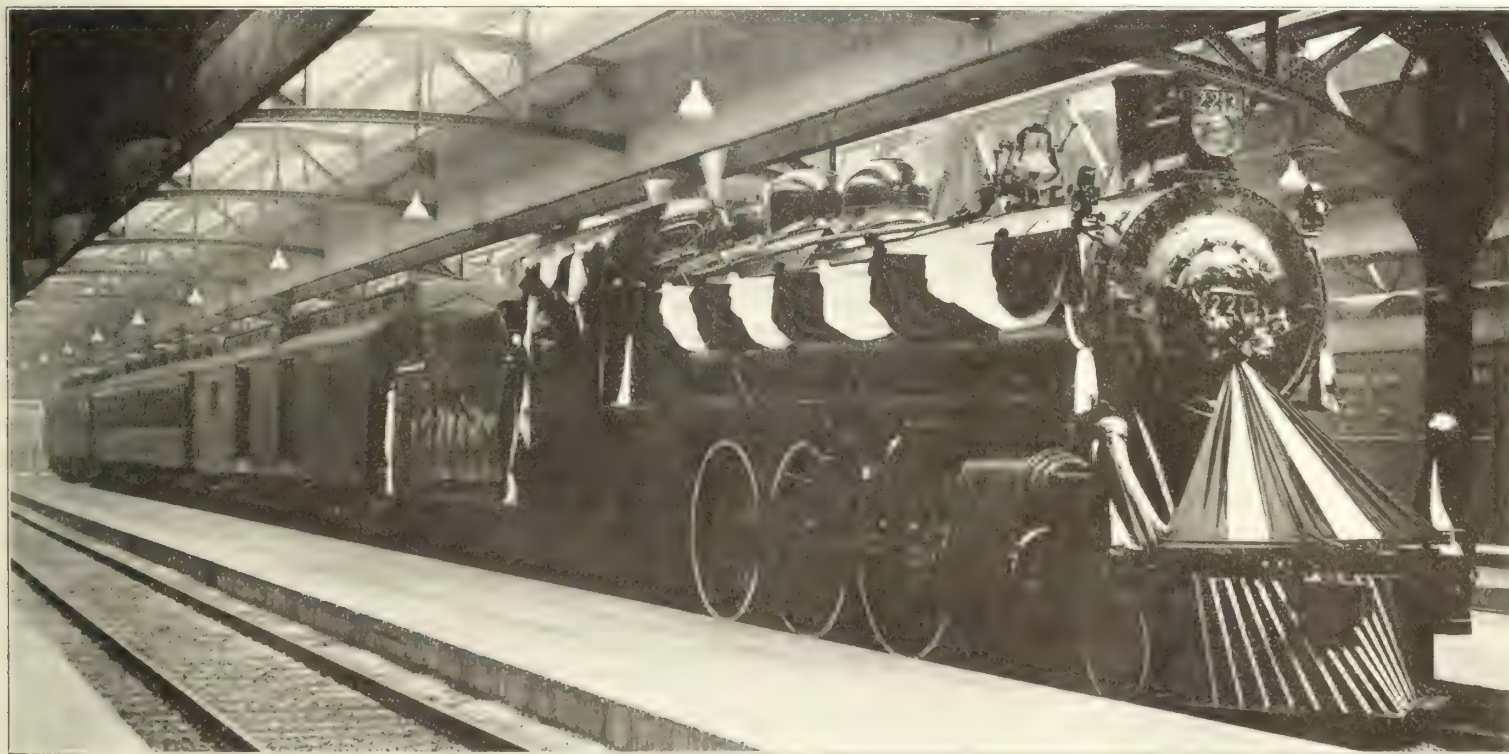
gaged in spirited rivalry with the United States railways, he commanded the respect of his competitors and made warm friends among the most distinguished railway men and financiers of the United States.

On June 12, 1899, Sir William resigned the presidency, and was succeeded by Sir Thomas Shaughnessy. He then became Chairman of the Board of Directors, which office he held until May 9, 1910, when he retired, on the ground that his post was "only a nominal one, not at all useful and hardly ornamental."

"You see," said Sir William then, "I am getting old, and I do not wish even to keep up the appearance of attending to business. I am getting out of everything that may make the least demand on my time or freedom. I shall of course remain on the board of the C.P.R. as long as the shareholders see fit to elect me, for naturally the C.P.R. has a large place in my affections. But in such a concern as the C.P.R. there can be but one active head. Sir Thomas Shaughnessy is that head, and has been for a long time, and I need not tell you what a competent head the company has in him, nor how abundantly able he is to manage its affairs without the aid of anybody. It is my heartfelt wish that he will stick to it for years to come."

Sir William retired with the reputation not only of having accomplished the most difficult feat of railway building ever recorded, but of being the most successful railway man the North American continent had produced and the organizer of the greatest transportation company in the world.

After the close of the Spanish American War, Sir William became interested in railway construction in Cuba in view of the vast possibilities for developing its rich natural resources. In the face of many obstacles and difficulties he and his associates persevered until a splendid system had



Sir William Van Horne's funeral train.

The special Canadian Pacific Ry. train waiting at Windsor St. Station, Montreal, to convey Sir William Van Horne's body to Joliet, Illinois. The car at the rear was the Saskatchewan. Sir William's "home on wheels" for over a quarter of a century. Next to it was a 60 ft. baggage car which was fitted as a mortuary chapel. A number of men under the charge of J. W. Bell, Superintendent of Building, Windsor St. station, were at work day and night from the Saturday to the Tuesday fitting this car with beautiful drapery. Each corner had a large wreath of magnolia leaves 3 ft. in diameter and in the centre of the car was a beautifully designed dais for the coffin. The locomotive was beautifully draped in black and white. Nearly a mile of drapery was used in decorating the train and the front of the C.P.R. station and office building.



was constituted. It was in 1900 that he acquired the Cuba Company and became its president. Including the entire main line from Santiago to Santa Clara, and the numerous feeder lines, this new railroad system has something over 1,000 miles of track, which only lacks 200 miles of the aggregate mileage of the 17 other railroads on the island. Some of the principal ports reached by the branches are Baracaco, Nipe, Gibara, Santa Cruz del Sur, Sancti Spiritus and Manzanillo. It was the purpose of Sir William and his associates to encourage colonization and to develop the productive sections of Cuba as rapidly as possible. To this end organized efforts were made by agents of the Cuba Co. to induce immigration from Central and South American countries, the natives of which find the Cuban climate congenial. American colonies have been established along the line of the new railway, and American ingenuity and push are rapidly producing beneficial effects in both a commercial and social way. The Van Horne syndicate bought large tracts of agricultural and timber lands which are being converted into ranches, small farms and sites for settlements. All of the capital invested came from Canada and the United States. The Cuba Railway is pronounced by those who are familiar with the conditions of the island—its marvellous productiveness and the great economic value of its products,—to be an achievement big enough to have made the reputation of any ordinarily successful man.

The railway which Sir William built in the Republic of Guatemala, Central America, has been in operation for some years. It extends from the capital of the republic to Port Barrios, on the Atlantic coast, and is about 200 miles long. The Government of Guatemala had heard so much of Sir William's success in Cuba as a railway builder that they opened up communications with him, the result being that valuable concessions were accorded, and the work was started. The President of the republic and other dignitaries were present at the opening, and Sir William Van Horne was hailed as a public benefactor on the spot.

Sir William's fame as the head of the C. P. R. entirely overshadowed his other business activities. For instance, few outside the actual stockholders knew that he was the Dominion's greatest business authority on the pulpwood question, and the head of the largest paper-manufacturing concern in the Dominion—a concern exporting its manufactures to all parts of the world. Few knew, also, that he took a prominent part in the directing of big mining and steel manufacturing enterprises, and that he had scores of minor interests all connected with the development of the natural resources of the Dominion. He was President of the Laurentide Paper Co.; the Canadian Salt Co.; the Canadian Northwest Land Co.; the Cuba Company; the Cuba Ry Co.; Vice-President of the Dominion Steel Corporation; director of the Duluth, South Shore and Atlantic Ry.; of the Dominion Iron and Steel Co.; the Royal Trust Company; the International Banking Corporation; the Minneapolis, St. Paul and Saulte Ste. Marie Ry.; of the Equitable Life Assurance Co.; the Dominion Coal Co.; the Mexican Light and Power Co.; the Winnipeg Electric St. Ry. Co. He had formerly been a director of the Mexican Consolidated Electric Co.; the Havana Electric Co.; the Federal Sugar Co.; the Commercial Cable Co.; the Postal Telegraph and Cable Co.; the Rio de Janeiro Tramway, Light and Power Co.; and Port of Para Dock Co. He was a promoter of the North American Mail Steamships Company in 1900; of the Pacific Coal Co. in 1901; and the Grand Falls Power Co. in 1905.

Sir William, in 1911, threw himself into the memorable political struggle over the famous Taft-Fielding reciprocity agreement. In an open letter, circulated throughout the Dominion, his voice rang out, vigorous, decisive, and epigrammatic. He was even induced to deliver two or three public addresses, not so much in support of Conservative candidates as in opposition to the fiscal policy of the Laurier administration. He boldly denounced reciprocity as a fatal policy for Canada—"a bed to lie in and die in," and his utterances had a tremendous effect everywhere. As he had never been a politician, and what he had to say about reciprocity had no reference to politics, nor to any particular interests, his words were listened to with profound respect by all classes, and undoubtedly their influence was great. No one doubted that Sir William felt strongly when he went upon the platform. That was not where he belonged nor where he showed to most advantage.

Sir William's collection of art treasures, to which he was constantly adding, was a never-failing source of delight to him. He was a collector of old masters, not for the empty glory of associating his name with that of great artists, but because he was himself an artist, and gloried in having beautiful things about him. His home on Sherbrooke St. West, Montreal, so full of art treasures, was to him a "glorious court," and in it he held constant converse with the great dreamers and artists and the master craftsmen of all ages. His taste in art was broad, even universal, and his knowledge of every known school of art, dating from the earliest historic times down to the very latest post-impressionist period, was positively astounding. And what is more, he not only had the knowledge, but he was himself an artist of real genius. This man, who had earned his own living from the age of thirteen, who had educated himself and risen from the position of an office boy to that of the greatest railway builder of his age, whose life had been a titanic struggle with titanic tasks, this man was a painter of pictures which would adorn the walls of any exhibition, as they already do the walls of many homes.

There is one room in Sir William's home that very few visitors were ever allowed to enter. Its walls are entirely covered with paintings of his own execution. There are many canvasses, large and small—lovely examples of "paysage intime"; great, dignified pictures of wood and meadow, executed with a bold, sure handling of mass and color that bespeaks the master; seascapes that breathe forth the majesty and the mystery of the ocean; impressionist studies of sunrise and of night.

"I never had a lesson in painting," said Sir William to a visitor not long ago, "and never would have one. I don't think much of my own artistic efforts, but what I do know I have taught myself. Most of the pictures in this room were painted in from four to six hours. That picture there"—pointing to a fine impression of the steel works at Sydney, C.B., seen over an arm of sea at night—"I painted between bedtime and sunrise. This one"—indicating a huge canvas depicting a scene in the New Brunswick woods—"took me longer than any other. I was eight or ten hours doing it."

One of Canada's leading painters once said: "This continent lost a great artist when Van Horne became a railway builder."

Sir William's greatest delight was to paint. Many of his pictures he gave away to his friends. Down at St. Andrews, N.B., where he had his summer home, there are many houses which contain examples of his work. Whenever anybody went there and built a beautiful summer home, Sir William

regarded it as a sacred obligation on himself to repay their choice of the location by painting a picture for the newcomers, usually painting a decorative picture of a St. Andrew's scene to be let into the wall over the mantel shelf.

Sir William had no set "picture gallery." His whole house is one. The walls in every room are covered with art treasures. Many of the greatest names in the history of art—Spanish, Dutch, French, English and Oriental—are represented on his walls; and what is more, he not only had secured an exceptionally fine example of many of them, but in a surprising number of instances he had possessed himself of the artist's masterpiece. He would tolerate no junk with a great name attached to it. The picture itself had to be great.

Sir William's most valuable picture is a life-size portrait by Velasquez, which is recognized the world over as the greatest picture that artist ever painted. It is difficult to put a price upon this, but judging by the figures which other pictures by Velasquez have brought, this one would command at least \$500,000.

As befitting a man of Dutch extraction, his collection of pictures by great Dutch artists became a particularly fine one. But his taste in art was so universal that he would not admit any national preferences. He would get enthusiastic just as much over a picture painted by some Chinaman far back in the dim beginnings of history as he would over any Dutch picture, and appeared to be as great an admirer of a portrait by Crotchet, the post-impressionist, as he was of the work of the great Romney.

Sir William was proud to be the possessor of a portrait by Leonardo da Vinci, the painter of that world-famous picture, the Mona Lisa. He considered it as one of his greatest prizes. It is the portrait of a woman, with something quizzical and elusive about the expression on the face.

Among the pictures that particularly appeal to the imagination in his wonderful collection are two portraits dug up from an Egyptian tomb, and painted in a far-off dynasty B. C. The pictures are the work of some genius. In all the essentials they are as skilfully done as any modern painter could have done them. While mellowed by time, they are wonderfully preserved. The coloring is harmonious, and pose and expression perfectly natural.

Sir William's method of cataloguing was unique. As each object was acquired he made a thumb-nail water-color sketch of it in a "day journal," accompanying the sketch with a description of the object, where it was purchased, who made it and its history. Each thumb-nail watercolor sketch became itself a little masterpiece. Every line, mark and variation of coloring was faithfully depicted, with marvellous detail. Later all this was copied into a general catalogue, but instead of a thumb-nail sketch, a life-size sketch was made, also in water color, brilliantly done. In every particular each drawing was made a faithful copy of the original. There are 42 large volumes of this illustrated catalogue in Sir William's strong room, every drawing in them the work of his own hand, every bit of written description his own writing. For the work of one man this catalogue is nothing short of monumental, a sight of it giving one the impression of the work of a whole life-time. Yet every bit of this work had been done late at night. Sir William never felt that he could afford any of the serious hours of the day for this work of cataloguing. Practically all of it was done after 10 o'clock at night. It was one of his recreations after the hard work of the day. He was a marvellously quick worker, with absolute surety of touch in line and color.



Sir William carried in his head a succinct biography of every artist, a cyclopaedic knowledge of every period and of every school; he had a sympathetic insight into the painter's meaning, his composition, texture and coloring.

Pictures comprised only a part of Sir William's treasures. He had a wonderful collection of the beautiful things which come under the general description of objects d'art. Many of the world's greatest past and present master-craftsmen are represented in this collection and every object in the collection—there are hundreds of them—had been catalogued by Sir William himself.

Many years ago he started out to acquire original models of ancient war vessels, and he got together the most complete collection of them in the world. The models belong to the hey-day of the sailing age, and they are the originals of many of the most famous battleships in the great Dutch, Spanish and British navies of centuries ago. For years he was practically alone as a connoisseur of old-time war vessels, and Europe yielded him her best in this department. To-day these models are almost priceless, and they are eagerly sought after. Very proud was Sir William of his great Armada, for every model in this collection is the original model of an historic battleship.

Sir William's collection as a whole represents a big fortune in itself. Nobody except himself ever knew what it had cost him, and he wouldn't say. But he did on one occasion hazard a guess as to what it is worth. "Perhaps it is worth about \$2,000,000," he said. Considering that one picture alone—the Velasquez—is worth at least \$500,000, his estimate would seem to be an exceedingly conservative one, for his great mansion is filled from floor to roof with artistic treasures.

Sir William was a Governor of McGill University, of the Royal Victoria Hospital and of the Protestant House of Industry, a member of the Committee of Management of the Montreal Homoeopathic Hospital, and Vice-president of the St. John Ambulance Association, a councillor of the Montreal Art Association and a vice president of the National Arts Club of New York.

Sir William held peculiar ideas on the subject of sleep. His doctrine was that sleep is just a habit. Therefore instead of spending one third of his time in bed, like ordinary mortals, he went to bed only when he was thoroughly convinced that it was imperatively necessary in the interests of his health. He thought nothing of staying up nearly all night, and making up the deficiency by snatching a few winks here and there during the day. He had the knack of commanding sleep whenever and wherever he willed it. He could doze off whenever he liked for five minutes, and wake up at the end of that time thoroughly refreshed. He had such an intense interest in life that he felt he could not afford to sleep, except by way of indulging in brief intermezzos. His great business interests—although he had long since "retired" into private life—occupied much of his attention, for the rest, travel, art and study and the companionship of kindred spirits kept every waking moment occupied. Even in his most strenuous years Sir William always found time to devote himself to other pursuits than those of every day work. For instance, he was an excellent violinist and had never allowed his ability to render classical music to become rusty. He enjoyed farming on the model plan, and he was passionately fond of incessant movement and travel.

[The foregoing sketch is not original, but is a compilation of matter gathered from

various sources, particularly from the Montreal Star, which devoted a large amount of space to the subject.—EDITOR.]

Few things show Mr. Van Horne's foresight more forcibly than his decision when he assumed the C.P.R. general managership that the company should control everything connected with its operations, and that there should be no outside concern reaping earnings that should belong to its shareholders. Profiting by his experience on the Chicago, Milwaukee and St. Paul, he absolutely refused to hand over to either of the then two great sleeping car companies in the United States the right to operate over C.P.R. lines, and he had sleeping cars built as rapidly as use could be found for them. The first through train from Montreal to Vancouver had C.P.R. sleeping cars, which were probably ahead of any that had been built up to that date, and no outside sleeping cars have ever been run on the company's lines, except in a few cases where it is absolutely necessary on account of through trains running partly over United States lines. He decided to organize the company's own telegraph service, selecting one of the brightest young telegraphers of that day, Chas. R. Hosmer, under whose vigorous management the lines were built, not only along the company's railways, but through a large outside territory. An advantageous alliance was effected with the Mackay-Bennett telegraph system in the United States and with its Atlantic cable system, and as a result the C.P.R. Telegraphs is to-day one of the two largest on the American continent. Similarly there was developed the great hotel system, stretching from New Brunswick to British Columbia, while the restaurants all along the line and the news business on the trains and vessels are operated directly by the company. Steamships on the Great Lakes were a necessary adjunct of the rail services, and three vessels surpassing anything then on the inland waters were placed on the Georgian Bay, Lake Huron and Lake Superior route. Next the Pacific Ocean was used to secure traffic to and from the Orient. The most beautiful yacht like craft were put in service between British Columbia, Japan and China, and a large volume of through traffic was secured for the transcontinental lines. Later came the Atlantic steamship service and Mr. Van Horne realized one of the most cherished of his desires, the ability to ticket passengers through from Liverpool to Hong Kong over a continuous C.P.R. route. The Dominion Express Company was formed to handle the express traffic, its stock being all held in the C.P.R. treasury, and W. S. Stout was placed at the head of it, a choice which has been abundantly justified by the results.

Of all the men connected with the early history of the C.P.R., Sir William Van Horne stands out, not only as its builder and the creator of its unique organization, but as its prevailing dominant figure in many other matters. Lord Mount Stephen has sometimes been given the principal credit for the carrying through of the great undertaking, and there is no doubt that he was a tower of strength to it, but the writer, who knows something of the inner history of the company in its earlier years, has no hesitation in saying that Van Horne was the man who saved the situation at the most critical period of its history. As mentioned in the preceding sketch of his life, early in 1885 it became imperatively necessary to seek some re-arrangement of the company's finances, which would enable it to procure the capital necessary to make provision for the large volume of traffic which it had developed, as well as for the

great increase which it was felt certain would take place on the opening of the through transcontinental line in the spring of 1896. The Dominion Government was applied to, but Sir John Macdonald and the majority of his colleagues could not be persuaded to agree to the proposals made, although Sir Frank Smith strongly urged them. Mr. Stephen's visit to Ottawa in connection with the matter absolutely failed, and the company was within a day of the due date of a large amount of liabilities. When Van Horne was advised of the situation he rushed to Ottawa by a special train that made a record trip and put the circumstance squarely before the then Minister of Railways and Canals, the Hon. J. H. Pope, who was so impressed by the vigorous presentation of the facts, and of what a continued refusal would result in, that he at once sought Sir John Macdonald, and, aided by Sir Frank Smith, secured the Premier's acceptance of the company's proposals and a guarantee to the company's bankers, which enabled it to tide over its temporary difficulties. Had not Van Horne taken this prompt action and put his whole driving force at work, the company would have had to default in its payments, the bank with which it did business would have been placed in a very serious position, and a national panic would probably have ensued. The arrangement, which is now a matter of history, was approved by Parliament, and the company was placed in a stable position. This is not written with any idea of lessening the credit due Lord Mount Stephen for the great work he performed from the inception of the company until he retired from the presidency in 1888, but to put on record an indisputable fact and to show beyond all question that the C.P.R. owes not only its construction, but its actual uninterrupted existence as a company, to Sir William Van Horne.

One of Sir William's earliest selections for an appointment on the C.P.R. was Thos. G. Shaughnessy, whom he brought from Milwaukee and rapidly promoted as a result of having successfully filled every position occupied. Sir Thomas' continued able administration of the great enterprise, handed on to him by Sir William, is the best evidence of the latter's faculty to read character and to judge of ability.

Sir William was intensely human. Under the sometimes apparently brusque exterior was a sympathetic and most kindly heart. When "Jimmy" French, who was the colored porter on his private car Saskatchewan for many years, died, Sir William attended the funeral and followed the body to the grave.

**C. P. R. Stockholders.** Sir Thomas Shaughnessy is credited with stating recently that C. P. R. common stock is held by 40,468 persons, of whom 5,138 are Canadian holders. Of the \$260,000,000 of common stock, 62.88% is held in Great Britain and Ireland, 13.64% in Canada, 10.39% in the United States, 5.33% in Germany, 5.63% in France and 2.13% in other countries. Since June 1913 the percentage of British holdings has increased by 2.88%, while the holdings in the other countries named have considerably decreased, German holdings dropping from 15% to 5.63%.

**American Association of General Baggage Agents.**—As a result of a correspondence vote, the annual convention, which it was at first intended to hold at Los Angeles, Cal., in September, will be held at Kansas City, Mo., Oct. 13 and 14. J. L. Quick, General Baggage Agent, G. T. R. and G. T. P. R., Toronto, is Secretary.



## Prominent Men's Comments on Sir William Van Horne's Death.

**The Right Hon. Sir Robert Borden,** Minister of Canada: "I have learned with deep regret of the death of Sir William Van Horne, who has been for many years a conspicuous figure in the national life of our Dominion. He was distinguished not only by his remarkable ability and energy, but by the wonderful versatility of his fine intellectual powers. His keen insight into all that concerned the progress and welfare of Canada, and the wonderful opportunities afforded by his career, gave him a great grasp of the difficulties and problems attending the rapid growth and development of our country. Before leaving for England in June I asked him to accept the Chairmanship of a Commission which was then announced, and he had agreed to undertake the task. Shortly afterward, however, his health began to fail, and the constitution of the Commission was postponed until my return, when I learned of his serious illness. I know that it was his keen and intense desire to be of service to Canada in every possible way in the great struggle through which we are now passing, and his declining health alone prevented him from undertaking the service in which his ability and experience would have been of the greatest value."

The Commission above referred to, to which Sir William was to have been appointed as Chairman, was the one announced prior to the Premier's departure, to inquire into and make recommendation upon a large range of problems, including transportation, agricultural production, finance, unemployment, etc. Such a commission had been asked for by the delegation of Mayors which visited the capital early in the summer.

**Sir Thos. G. Shaughnessy, K. C. V. O.,** President, C.P.R.—"I first met him in 1880, when he became General Superintendent of the Chicago, Milwaukee, and St. Paul Ry. At that time I was connected with the purchasing department of that line. At the end of 1881 he accepted the appointment of General Manager of the C.P.R., and came to Canada. A fortnight after he asked me to accept the position of General Purchasing Agent for the C.P.R., but there were reasons why I could not accept the offer at that time. A few months later, when he urgently repeated the invitation, I decided to come and take up the post. From that time till the date of his death, Sir William and I have been intimate business and personal associates; and although in recent years his interests have been in one direction and mine in another, there is, I feel sure, no person, apart from the members of his own immediate family, who is more grieved by his death than I am. Probably I knew him more intimately than any one else. His was a great mind, a great heart and a lofty soul."

**Sir Donald Mann,** Vice President, Canadian Northern: Sir William Van Horne was a genius and one of the biggest men of his time. He never realized how great a man he was himself. In my opinion the greatest work he did for the C.P.R. was in the locating of its lines for traffic production purposes, the location of the 'Soo' line being an example of his farsightedness. As an operating man Sir William had few equals on the North American continent, and his knowledge of and experience in operating has been of incalculable value to the C.P.R. Of a most lovable disposition, he was universally liked and esteemed."

**R. B. Angus,** director, C.P.R.: "Sir William was a very dear friend of mine. His loss is a great blow. He was a man of un-

common ability and remarkable foresight, and he was very very highly appreciated by all who knew him."

**Charles R. Hosmer,** director, C.P.R.—"I have been a very intimate friend of Sir William's for 30 years, and have often remarked that there are not half a dozen men on the whole continent who were his equal. We all hold a very deep affection for him, and he was one of the ablest associates we could have had. He was a great business man but a real boy outside of his work, being very enthusiastic in everything he took up and was filled with boyish enthusiasm and eagerness over it all. His loss makes a big gap that it will be hard to fill."

**James J. Hill,** of St. Paul, Minn., formerly President Great Northern Ry.: "Sir William was a dear, close, personal friend of mine. I knew him well back in the seventies. He was a self-made man in every sense of the word. He started his railroad career as a telegraph operator and worked his way rapidly to positions of importance on the Chicago and Alton, Chicago, Milwaukee and St. Paul and other railways in the United States before he allied himself with the Canadian Pacific. He put his great personality into his work in Canada, and made of the Canadian Pacific one of the greatest railway systems of the world. He was a man of broad ideas, progressive and modern. To-night I can think of no one man whose loss in the development of business and railroad development could be compared with his."

## The Rogers Pass Tunnel Suit.

Canadian Railway and Marine World for September mentioned briefly that the British Columbia Court of Appeal had given a decision in the case of McIlwee & Sons against Foley, Welch & Stewart for practically the full amount claimed. The Vancouver Province gives the following particulars: "By allowing the appeal of J. McIlwee & Sons, tunnel drivers, of Denver, Col., and dismissing the cross appeal of Foley, Welch & Stewart, the Court of Appeal gave a judgment which, if expressed in dollars and cents, may mean anything from \$500,000 to \$800,000. The claim, which was originally for \$527,000, is now to be amended to a claim for \$800,000 before the case comes again before Mr. Justice Clement to assess the amount of damages."

"The suit in which such enormous figures are involved arises out of the contract to run the pioneer and heading tunnels for the great tunnel under Mount Donald, which the C.P.R. is boring at Rogers Pass in the Selkirks. The tunnel, which is approximately five miles long, is to be finished a year hence. Under modern systems for tunnel boring, a pioneer bore about 10 ft. in diameter is first driven at a distance from the main tunnel of some 50 ft. This enables the main tunnel to be attacked from half a dozen different points, and proves a great economy in time for construction."

"The contract for the entire tunnel was let to Foley, Welch & Stewart, who in turn sublet the contract for boring the pioneer and heading tunnels to McIlwee & Sons. In addition to the ordinary contract for the bore, a bonus of \$1,000 a foot for every foot bored in excess of a stipulated amount per month was offered as a special inducement for record speed by the McIlwee firm. The figure meant that the McIlwees would have to break the American record for rapid tunnel work to touch the \$1,000 a foot bonus.

A limit of \$250,000 was placed on the amount of the bonus.

"In September, 1914, after the McIlwees had been at work on their contract for four months, and had proceeded with such rapidity that they claimed that they had earned \$215,000 bonus in addition to the profits of their contract, troubles arose between them and Foley, Welch & Stewart. The engineers for Foley, Welch & Stewart complained that the McIlwees were using too much compressed air for their machines and fans and hindering the other workmen. After trouble and counter charges by the McIlwees that the chief contractors were purposely holding back the work, the McIlwees were ordered to stop work on the ground of disobedience of instructions given by the chief contractors' engineers. Later, after some six weeks of negotiations, Foley, Welch & Stewart offered to allow McIlwees to resume work."

"Instead of resuming work the McIlwees entered suit against Foley, Welch & Stewart for the full amount of the bonus and profits on the contract, totalling \$527,000. At the trial, before Mr. Justice Clement and two assessors, experts from all parts of the continent were called, the hearing lasting three weeks. The plaintiffs' counsel contended that the stoppage was unwarranted, and entitled the plaintiffs to full damages for breach of contract. They suggested that the stoppage was deliberate and was intended to prevent the McIlwees from reaping the profits of a fat contract. Defendants' counsel contended that Foley, Welch & Stewart were justified in stopping the McIlwees for disobedience, and that their offer to allow them to resume work was an answer to the claim for damages for breach of contract. They argued from the evidence of geological experts that the plaintiffs were not entitled to any of the \$215,000 bonus they claimed to have earned, as the rapid boring had been done in soft rock, and that later on in the heart of the mountain extremely hard rock would be encountered, which would reduce the monthly average speed and mean that no bonus at all would be earned."

"In his judgment at the trial, Mr. Justice Clement said he found that McIlwees should have returned to work on Nov. 9, when invited to do so, and their failure to return to work prevented them from obtaining damages for breach of contract. He disallowed the claim for bonus, and gave judgment for \$32,000, which comprised damages at the rate of \$600 a day unearned profits for the period from the time of stoppage of work until Nov. 9."

"The case was argued at great length before the last sitting of the Court of Appeal, both sides having entered appeals. The result of the appeal is that the judges, with Mr. Justice Gallihier dissenting, have allowed McIlwees appeal in full with costs, and dismissed the cross appeal of Foley, Welch & Stewart. Chief Justice Macdonald and Mr. Justice Irving, in their written judgments, say they find that McIlwees are entitled to the full amount of the bonus claimed, and also to all the damages for loss of profits they can show on a reference to the trial judge. At the trial Mr. Justice Clement found these damages to be at the rate of \$600 a day. The costs of the trial are said to amount to about \$8,000, and of the appeal to about \$5,000."

As stated in our last issue, Foley, Welch & Stewart will probably carry the case to the Supreme Court of Canada.

The Canadian American Railway Construction Co. has been granted a license under part 4 of the Manitoba Companies Act, and J. M. Wiley, Winnipeg, has been appointed attorney and agent for Manitoba.



## A Personal Tribute to Sir William Van Horne.

To me Sir William Van Horne's death is a severe blow and irreparable loss; the termination of an intimate friendship of over thirty years which I shall always look back to as one of the greatest privileges of my life.

When, in the autumn of 1881, Mr. Van Horne first visited Winnipeg with Mr. J. J. Hill, who, at the request of the other members of the Canadian Pacific Railway "Syndicate" (as its original directors were designated) to secure the best available man for the stupendous task of building Canada's first transcontinental railway and

at length. In many a conversation he told me of difficulties that were being encountered and of plans for the future that necessarily could not be made public, and I think I can say without egotism that in matters of this nature I enjoyed his confidence to at least as great an extent as any other person not on the company's directorate or in its service, a confidence the respect of which he often spoke of in after years. Looking back over the years that have passed I realize how great was his foresight, how far he planned ahead and how very rarely his judgment was astray.

roundings of his own home, and for other unvarying kindnesses extending considerably over a quarter of a century.

The last rail on the C. P. R. main transcontinental line was laid at Craigellachie, B. C., Nov. 7, 1885, after what was described in the directors' report for that year as "Fifty three months of arduous labor, some anxiety and much unfair and undeserved hostility." By a strange coincidence on May 25, 1894, I was at Craigellachie, the scene of Mr. Van Horne's triumphal completion of his great life work, being detained there for some three days by a series of mud slides

917 SHEARBRIDGE STREET

Montreal  
9<sup>th</sup> June 1894

Dear Brewster -

Very few,  
I assure you, of all  
the congratulations I  
have received have  
given me as much  
real pleasure as yours  
for, among other reasons  
you were the very  
first acquaintance I  
made in Canada. I  
had not then met Sir  
Donald Smith and Angus  
was at the time a  
resident of St Paul.  
When I reached Winnipeg

for the first time early  
in October 1881 you  
were the very first  
man I met on the  
station platform and  
then commenced an  
acquaintance - a friendship  
which has never ceased  
for a minute to be a  
pleasure to me.

I thank you with  
all my heart, dear Brewster  
for all your kind expressions  
and good wishes and  
I hope soon to have  
an opportunity to repeat  
my thanks in person.  
Sincerely yours  
W. Van Horne  
Action Brewster }  
Wm. B. G.

organizing its staff, had selected him, I was, among other duties, editing the Manitoba Free Press' railway department, and went to the C. P. R. station to interview him. Vividly do I remember the lasting impression I then formed of him, his commanding presence, his rugged health, his evident determination, his epigrammatic answers, his abundant humor and kindliness.

He assumed his duties at Winnipeg on New Year's Day 1882, and it was part of my work to call almost daily at his office, to which I soon had a clear right of way. Busy as he was, generally working there far into the night, he was invariably courteous and willing to give information as to the company's operations, which he often explained

Mr. Van Horne removed his office from Winnipeg to Montreal late in 1882, but during the construction period he visited Winnipeg very frequently, and after that less often, on most of which occasions I had the privilege of meeting him there, as well as, particularly during later years, in Montreal, and in addition we corresponded frequently. I have an intense feeling of gratitude to him for many personal kindnesses, of great thoughtfulness shown me in some of the happiest and some of the saddest periods of my life, for most valuable advice on many occasions, for much hospitality, including most enjoyable trips over portions of the lines on which I had the privilege of accompanying him, and in the charming sur-

roundings of his own home, and for other unvarying kindnesses extending considerably over a quarter of a century. The last rail on the C. P. R. main transcontinental line was laid at Craigellachie, B. C., Nov. 7, 1885, after what was described in the directors' report for that year as "Fifty three months of arduous labor, some anxiety and much unfair and undeserved hostility." By a strange coincidence on May 25, 1894, I was at Craigellachie, the scene of Mr. Van Horne's triumphal completion of his great life work, being detained there for some three days by a series of mud slides

Few but those who were on the spot in the early eighties have any idea of the col-



usual task Mr. Van Horne undertook and of the seemingly unsurmountable difficulties which he overcame, compared with which transcontinental railway construction to-day is a comparatively easy task. West from old Manitoba the route had to be decided on and construction pushed through an unsettled prairie country, a southerly way had to be found through the Rockies and the supposedly impenetrable Selkirk Mountains, all supplies and construction material had to be taken in from the Winnipeg and Pacific Coast termini, the former of which had no eastern Canadian connection, but never did a contractor have to wait, and continental track laying records were established for both a day's and a season's work. North of Lake Superior the construction difficulties and the getting in of supplies were gigantic tasks, but he grappled with them successfully, and, instead of taking the ten years allowed by the contract between the Government and the company, completed in half that time the great railway that will be his enduring monument and an emphatic witness to his indomitable will, his untiring energy, his organizing ability and his absolute thoroughness. Never was a railway more honestly built and never did shareholders get better value than for every dollar that was put into it.



The new Union Station, Toronto, on which work has been started.

From the day he first set foot on Canadian soil Sir William Van Horne was a never varying believer in the great future of the country, and it is not too much to say that he was one of the very first to really impress on Canadians generally the immense potentialities of the Dominion and especially of the vast territory west of Lake Superior. For the development of its latent resources, altogether outside of the railway sphere, he labored incessantly, and no native born Canadian could have performed more thorough service than he did to the country of his adoption and of which he soon became a naturalized citizen.

He was a man of gigantic intellect, an able administrator, largely self taught, with a marvellous memory for his omnivorous reading on most varied subjects, a recognised authority on geology and art, a most thorough man on any subject he became interested in, a charming companion, an always interesting conversationalist, a loving husband and father, with thorough domestic tastes, and a loyal and unvarying friend. Among the real makers of Canada none will occupy a higher place in its history.

ACTON BURROWS.

The Canadian Pacific Ry., according to a press report, proposes to cut a trail through the Rocky Mountains from Bany to Lake Louise, Alberta, about 60 miles, during 1916.

### Starting of Work on Toronto Union Station.

H. G. Kelley, Vice President, Grand Trunk Ry., and President, Toronto Terminals Railway Co., gave the following statement to the press Sept. 26:

"Preliminary arrangements having been concluded for commencing work on the construction of the new union station at Toronto, the contractors have been instructed to proceed with this work. On account of the large expenditures involved at a time when the world's money market, and more especially the source from which Canada has been accustomed to obtain capital, is practically closed for other than war purposes, it appeared for a time that the undertaking would have to be indefinitely postponed. Arrangements were finally completed, however, with the Bank of Montreal for providing the funds necessary to allow the work to go forward, and the construction of the new building will therefore proceed at once.

"In the preliminary studies and final design adopted by the directors and approved by the Board of Railway Commissioners, every comfort and convenience for the travelling public and the City of Toronto has received careful attention. Much time has been devoted to the study and personal in-

Ardley, Auditor; W. C. Chisholm, General Solicitor; J. R. W. Ambrose, Chief Engineer.

The construction work will be under the general direction of Chief Engineer Ambrose, who will be represented by H. K. Ferguson as clerk of works. W. T. Griffiths will be Superintendent for the contractors, P. Lyall & Sons Construction Co.

The new station, which will face Front St., and extend from Bay St. to York St., was fully described and illustrated in Canadian Railway and Marine World for . .

**Canadian Railway Club.**—Wm. Roger, A.M. Can. Soc. C.E., Elevation Draughtsman, Canadian Pacific Ry., read a paper before the club in Montreal, Sept. 14, on hydraulic presses vs. power presses in connection with the manufacture of cartridges and shells.

**The Canadian Northern Ry. was fined \$50** and costs in the Manitoba Provincial Police Court, Winnipeg, recently for failing to report to the factory inspectors two accidents at its shops, as required by the Factory Act. Notice of appeal was given.

**The Grand Trunk Railway Patriotic Association** of Toronto, the inauguration of which was announced in our last issue, has purchased two motor ambulances for use at the front, and will send a third one should it be required.

spection of the latest approved railway terminals on the American continent, and it is hoped and believed that Toronto will have, in the new station, when completed, a railway terminal second to none. The east wing of the building will be owned and occupied by the Dominion Government as a postal station, and, by reason of its location, immediately adjoining the railway tracks, the receiving and despatching of all mail matter can be conducted instantly, thus avoiding delays which occur when mail matter must be carried to and from trains to postal stations located at distant points in the city. The west wing of the building will be occupied as railway offices by the Grand Trunk and Canadian Pacific Railway Companies, who have equal ownership in the terminals, while the central portion of the building will be the general concourse to and from trains, in which will be located the ticket offices and other accommodations for the convenience of the public. The work will be carried through to as early a completion as is practicable with the magnitude of the undertaking."

Work was started on the site Sept. 26, and it is expected to get the excavations made and the foundations built during the ensuing winter. The officers of the Toronto Terminals Co. are: H. G. Kelley, President; Geo. Bury, Vice-President; H. Phillips, Secretary; H. E. Suckling, Treasurer; J. W. Leonard, General Manager; W. H.

**The Great Northern Ry. (U. S. A.)** has obtained authority from the Board of Railway Commissioners to make certain reductions in its train service in British Columbia. Full particulars are given on another page under "Orders by the Board of Railway Commissioners," viz, orders 24161 and 24163.

**The Mount Lehman Lumber, Timber and Trading Co., Vancouver, B.C.,** has been granted permission to build its logging railway under the British Columbia Electric Ry.'s New Westminster-Chilliwack line at mileage 30, with a head room of 12 ft.

**Canadian Northern Ry. Coal Supply.**—In operating the line north of Lake Superior coal will be supplied from Port Arthur for about 300 miles east and from that point east coal will be hauled from Toronto and other coaling stations in the east.

The Dominion Government engineers and the contractors engaged on the construction of the Hudson Bay Railway, are reported to have offered to supply two machine guns and the men to operate same, to be attached to the 45th Battalion of the Brandon Regiment.

S. Hammett, formerly treasurer of Toronto Lodge 108, Brotherhood of Railway Trainmen, Belleville, Ont., was sentenced to a term in Kingston Penitentiary, Sept. 9, for misappropriating \$800 of the lodge's funds.



# Mainly About Railway People Throughout Canada.

Mrs. Smith, wife of J. F. Smith, General Freight Agent, C. P. R., London, Eng., died there Sept. 7.

**W. F. Stevenson**, General Agent, Freight Department, C. P. R., New York, died there, Aug. 21, aged 60.

**J. Walker**, formerly Assistant Engineer, Barrie Division, G. T. R., Allandale, Ont., is on active service in Europe.

**C. M. Greene**, of New Orleans, La., who died at Cobourg, Ont., Sept. 15, aged 75, was a pioneer railway builder in the United States.

**J. L. Doupe**, Chief Surveyor, Western Lines, C.P.R., Winnipeg, has been elected a member of the American Railway Engineering Association.

**Abel Grills**, General Roadmaster, G.T.R., St. Thomas, Ont., has been elected Second Vice President, Roadmasters and Maintenance of Way Association, for the current year.

**Major C. N. Monsarratt**, A.M.Can.Soc. C.E., Chairman, Quebec Bridge Commission, has been appointed officer commanding the 5th Royal Highlanders, succeeding Lieut. Col. J. G. Ross.

**Major W. B. Kingsmill**, of Saunders, Torrance & Kingsmill, Toronto, solicitors, Michigan Central Rd., has been promoted to Lieutenant Colonel and to command the 10th Royal Grenadiers.

The Anglers' Inn, a summer resort on the Rideau River near Portland, Que., which was destroyed by fire Sept. 1, is stated to have been owned by **I. G. Ogden**, Vice President, C. P. R., and was valued at \$12,000.

**Gordon Reed**, cadet, Royal Military College, Kingston, Ont., and son of Hayter Reed, formerly Manager in Chief, C. P. R. hotels, has received a commission in the Imperial Army and gone to England.

**H. Le Jeune**, formerly of the C.P.R. Hotel Department, who has lived at the Royal Alexandra Hotel, Winnipeg, for several years, was stricken with paralysis, Sept. 19, while looking over the improvements in the C.P.R. station there.

**James Carson**, of Carson and Whan, contractors, who held a sub contract on the Edmonton, Dunvegan and British Columbia Ry., was run over by a grader and killed, at Smoky River, Alta., towards the end of August.

**Sir Thomas Tait**, President, Fredericton & Grand Lake Coal & Railway Co., and Lady and Miss Tait, who spent most of the summer at St. Andrews, N.B., have returned to Montreal and taken a suite at the Ritz-Carlton Hotel.

**John Aird**, who has been appointed General Manager, Canadian Bank of Commerce, began work with the old Northern Ry. of Canada, and was subsequently secretary to its Managing Director, the late F. W. Cumberland, before entering banking service.

**Brigadier-General Nanton**, was received in audience by the King recently, and invested with the insignia of a Companion of the Order of the Bath. He is a brother of A. M. Nanton, of Winnipeg, who is one of the C. P. R. directors.

**J. H. Plummer**, President, Dominion Steel Corporation, and of its subsidiary companies, the Cumberland Railway and Coal Co., and the Sydney and Louisburg Ry., is reported to have been told by his physician that he must take a rest.

**W. E. Mullins**, who was formerly in G. T. R. service, and who has been for some time with the United Fruit Co., latterly as Gen-

eral Manager, Costa Rica Division, San Jose, has been appointed General Manager in charge of freight traffic, with office at New York.

The will of the late **F. S. Hammond**, who was a passenger on the s. s. Lusitania, when she was torpedoed by Germans, and who was a son of the late H. C. Hammond, of Toronto, one time President of the Northern Navigation Co., left an estate valued at \$100,333.34 to the widow.

**T. S. Moise**, General Manager, Central of Georgia Ry., Savannah, Ga., died at Timagami, Ont., towards the end of August, aged 53. His entire railway service from 1880 to the time of his death was with that company, and he passed through all the grades from clerk and agent upward.

**Acton Burrows**, Managing Director and Editor in Chief, Canadian Railway and Marine World, has been re-elected a mem-



**A. A. Tisdale**, Superintendent, Regina Division, Grand Trunk Pacific Railway.

ber of the Canadian Press Association's Postal and Parliamentary Committee, and has also been elected Chairman of the Association's Trade and Class Paper Section and a member of the Association's Board of Directors.

**W. H. Stennett**, Auditor of Expenditures, Chicago and North Western Ry., who died at Oak Park, Ill., recently, was born in Ontario in 1832, and went to the U. S. at the age of 17. He entered railway service in 1867 with the Illinois Central Rd., transferring to Chicago and North Western Ry. service in 1873, and remaining with that company to the time of his death.

**William F. Fitch**, who died at Marquette, Mich., recently, was born at Circleville, Ohio, June 28, 1839, and entered railway service, Oct. 14, 1851, as clerk in the General Manager's office, Chicago and North Western Ry. He rapidly rose to the higher positions, and in 1866 was appointed General Manager of the Fremont, Elkhorn and

Missouri Valley Rd. and Sioux City and Pacific Rd. In 1888 he was appointed Vice President and General Manager, Duluth, South Shore and Atlantic Ry., and in 1902 he was appointed President, retiring in 1911.

**John Andrew Humble**, who has been appointed Claims Agent, Canadian Government Railways, Moncton, N.B., was born at Stanley, N.B., Dec. 12, 1856, and during 1912 was material clerk for the Fredericton and Grand Lake Coal and Ry. Co., Fredericton, N.B. In 1913, he was arbitrator for the St. John and Quebec Ry. Co., Fredericton, N.B.

**H. A. Robson**, Commissioner of Public Utilities for Manitoba, who has acted in that capacity since the inauguration of the Commission in 1912, was reported by Winnipeg papers to have resigned, Sept. 2. We were officially advised, Sept. 22, that the newspaper reports were unwarranted, that there was no change in the personnel of the Commission, and that until official announcement was made (should any change occur) it was not safe to speculate. This official statement, of course, does not necessarily imply that a change is not imminent.

**Arsene Babin**, who has been appointed Resident Engineer, Maintenance of Way, National Transcontinental Ry., Quebec, Que., was born there, Sept. 8, 1881, and entered N.T.R. service in May, 1904, since when he has been, to June, 1906, topographer, leveller, transit man on preliminary survey and location, La Tuque, Que.; June, 1906, to Nov., 1914, Resident Engineer on Construction, St. Basile and Portneuf, Que. He graduated with the degree of B.A., from the College of Ste. Anne de la Pocatiere, in 1900, and with the degree of B.Sc. from Laval University, Que., in 1904.

**Bliss A. Bourgeois**, whose appointment as Assistant to the Comptroller and Treasurer, Canadian Government Railways, Moncton, N. B., was announced in our last issue, was born at Moncton, N. B., May 24, 1869, and entered Canadian Government Railways service, Nov. 17, 1887, since when he has been, to June 1890, clerk in General Superintendent's office, Moncton, N. B.; June 1890 to Nov. 1894, secretary to Treasurer, Moncton, N. B.; Nov. 1894 to Mar. 1907, bookkeeper, Treasurer's Department, Moncton, N. B.; Mar. 1907 to May 1915, chief clerk, Accounting Department, Moncton, N. B.

**Clayton H. Lundgren**, who has been appointed General Yardmaster, National Transcontinental Ry., Fort William, Ont., was born at Northfield, Minn., Dec. 22, 1877, and entered railway service in April 1895, since when he has been, to Oct. 1900, in the Mechanical Department, Minneapolis, St. Paul and Sault Ste. Marie Ry., Glenwood, Minn.; Oct. 1900 to Sept. 1909, freight and passenger conductor, same road, Minneapolis, Minn.; 1909 to 1911, in private business at Glenwood, Minn.; 1911 to 1912, in train service, G. T. Pacific Ry., Graham, Ont.; 1912 to 1913, Assistant Yardmaster, Canadian Northern Ry., Port Arthur, Ont.; 1913 to Aug. 1915, Assistant Yardmaster, G. T. Pacific Ry., Mission Yard, Fort William, Ont.

**Arthur A. Tisdale**, whose appointment as Superintendent, Regina Division, Grand Trunk Pacific Ry., Regina, Sask., was announced in our last issue, and whose portrait appears in this issue, was born at Mount Vernon, Ont., Mar. 8, 1874, and entered railway service Sept. 18, 1889, since when he has been, to July 1892, in local freight office, G. T. R., Hamilton, Ont.; July



1892 to May 1899, secretary to Chief Engineer G. T. R. Hamilton and Montreal; May 1899 to Oct. 1907, successively, secretary, chief clerk, and Assistant to Fourth Vice President in Charge of Transportation and Maintenance of Way, G. T. R., Montreal; Oct. 1907 to Oct. 1909, Assistant to Vice President and General Manager, G. T. Pacific Ry., Montreal; Oct. 1909 to June 1915, Superintendent Lake Superior Division, G. T. Pacific Ry., Fort William, Ont.

**E. Eley**, who has been appointed Master Car Builder, Eastern Lines, C. P. R., Montreal, was born in London, England in 1867, commenced railway service with the Great Northern Ry., at King's Cross, London in June 1888 and came to Canada in 1889. He entered C. P. R. service in the Bridge and Building Department, Mar. 1894, and was transferred to the Car Department at North Bay, Ont., Aug. 1894, and was, from Mar. 1902 to Jan. 1903, charge hand at Chapleau, Ont.; Jan. 1903 to July 1906, leading hand at North Bay, Ont.; July 1906 to Feb. 1907, Car Foreman, Quebec, Que.; Feb. 1907 to May 1911, Car Foreman, Glen Yard, Montreal; May 1911 to Apr. 1912, General Foreman, passenger car repair shops, West Toronto, Ont.; Apr. 1912 to Sept. 7, 1915, Divisional Car Foreman, Lake Superior Division, North Bay, Ont.

**A. P. Linnell**, Chief Assistant to A. B. Smith, Manager of Telegraphs, Grand Trunk and Grand Trunk Pacific Railways, Montreal, has been granted extended leave of absence, due to his having enlisted in the 3rd. Universities Company (reinforcements Princess Patricia Light Infantry) Canadian Expeditionary Force, and has sailed for England preparatory to going to the front. He was for some years secretary to the Commercial & Traffic Superintendent, Grand Trunk Pacific Telegraph Co., Winnipeg; subsequently, in order to gain additional experience, he transferred to the construction side of the telegraph business as an ordinary groundman, reaching ultimately the position of foreman in charge of one of the telegraph outfits building lines through the Rocky Mountains. In Jan. 1913 he was transferred to Montreal and given the position he has just temporarily vacated. On leaving Montreal recently he was presented with a wrist watch by his staff.

**W. M. Kirkpatrick**, Assistant Freight Traffic Manager, Eastern Lines, C.P.R., Montreal, has been appointed an officer in the 87th Overseas Battalion, Canadian Grenadier Guards, which has its headquarters in Montreal, and will leave shortly for active service. He is a son of the late Sir of the C.P.R., and was born at Kingston, Ont., Oct. 8, 1874. He entered C.P.R. service Mar. 7, 1892, in the Vice President's office, and up to July, 1899, filled various positions in the Chief Engineer's office, Foreign Freight Department, Montreal, and General Freight Agent's office, Toronto; July, 1899, to Dec., 1902, clerk in Fourth Vice President's office, Montreal; Dec., 1902, to Apr., 1905, Assistant General Freight Agent, Pacific Division, Vancouver, B.C.; Apr., 1905, to Feb., 1907, Export Freight Agent, Montreal; Feb. to Dec., 1907, General Freight Agent, Atlantic Division, St. John, N.B.; Dec., 1907, to Apr., 1911, General Freight Agent, Through Traffic, Ontario Division, Toronto; Apr. to Aug. 21, 1911, General Freight Agent, Eastern Lines, Montreal, at which latter date he was appointed Assistant Freight Traffic Manager, Eastern Lines.

**P. J. Flynn**, who has been appointed Superintendent, Districts 2 and 3, Central Division, Canadian Northern Ry., Winnipeg, was born at Fishers, N. Y., Nov. 22, 1872, and entered railway service, Apr. 1, 1888, since

when he has been, to Aug. 1, 1891, yard clerk, Lehigh Valley Rd., Buffalo, N. Y.; Aug. 1, 1891 to Apr. 1, 1892, night yardmaster, same road, Buffalo, N. Y.; Apr. 1, 1892 to Jan. 24, 1894, Yardmaster, Tift Farm, Yards, same road, Buffalo, N. Y.; Jan. 24, 1894 to Nov. 1, 1898, General Yardmaster, same road, Manchester, N. Y.; Nov. 1, 1898 to Apr. 1, 1901, Assistant Trainmaster, Pennsylvania Division, same road; Apr. 1, 1901 to Feb. 1, 1905, General Yardmaster, same road, Sayre, Pa.; Feb. 1, to Aug. 1, 1905, General Yardmaster, New York, New Haven and Hartford Rd., Worcester, Mass.; Aug. 1, 1905 to Feb. 1, 1907, General Yardmaster in charge of Terminals, same road, Providence, R. I.; Feb. 1, 1907 to Oct. 1, 1908, General Yardmaster in charge of Terminals, Lehigh Valley Rd., Buffalo, N. Y.; Oct. 1, 1908 to Jan. 1, 1913, Trainmaster, same road, Buffalo, N. Y.; Jan. 1, 1913 to Aug. 1915, Terminals Manager, Winnipeg Joint Terminals, Canadian Northern Ry., G. T. Pacific Ry. and National Transcontinental Ry., Winnipeg.



*P. 194*  
The Late F. M. Spaidal.  
General Superintendent, Quebec Grand Division.  
Canadian Northern Railway.

**F. M. Spaidal**, General Superintendent, Quebec Grand Division, Canadian Northern Ry., Montreal, died there, Sept. 2, after a prolonged illness. He was born at Gananoque, Ont., Nov. 13, 1858, and entered railway service in 1876, since when he was, to June 1883, operator, agent and dispatcher, G. T. R. at various points between Montreal and Kingston, Ont.; June 1883 to June 1885, agent and dispatcher, Union Pacific Rd., Butte, Mont., and other points; Aug. to Dec. 1885, operator, C. P. R., Ottawa, Ont.; Dec. 1885 to June 1893, dispatcher, C. P. R., Ottawa, Ont.; June 1893 to Sept. 1897, Chief Dispatcher, C. P. R., Ottawa, Ont.; Sept. 1897 to Oct. 1903, Trainmaster, C. P. R., Ottawa, Ont.; Oct. 1903 to Aug. 1906, Superintendent, District 2, Eastern Division and Montreal Terminals, C. P. R., Montreal; Aug. 1906 to Dec. 1907, Superintendent, Canadian Northern Ontario Ry., Toronto; Dec. 1907 he was appointed General Superintendent, Canadian Northern Quebec Ry., Montreal, and in Mar. 1908, he was also appointed General Superintendent, Quebec and

Lake St. John Ry., and his office moved to Quebec, Que. In 1913 he was appointed General Manager, C. N. Q. R. and Q. & L. St. J. R., and his office moved to Montreal, and in July 1914, on fuller organization of the Canadian Northern Ry., he was appointed General Superintendent, Quebec Grand Division, C. N. R., with office at Montreal. The funeral took place at Brockville, Ont.

**R. E. Larmour**, who has been appointed General Agent, Freight Department, C.P.R., New York, was born at Brantford, Ont., Sept. 26, 1868, and entered railway service Aug., 1884, at Stratford, Ont., as office boy in the office of his father, who was then Division Superintendent, G.T.R., remaining there until 1886; since when his record has been: 1886 to 1888, clerk in the office of General Manager, Great Eastern Fast Freight Line, Detroit, Mich.; 1888 to 1890, Accountant to General Superintendent, Chicago and Grand Trunk Rd., Detroit, Mich.; 1890 to 1892, Local Freight Department, G.T.R., Detroit, Mich.; 1892 to 1898, Transfer Clerk, Through Freight from Wabash Rd. to G.T.R., at Windsor, Ont. He entered C.P.R. service in 1898, and has been, to Nov., 1899, chief clerk Freight Department, Fort William, Ont.; Nov., 1899, to May, 1900, acting agent, Fort William; May, 1900, to Aug., 1900, chief clerk, Superintendent's Office, Fort William; Aug., 1900, to Feb., 1903, agent, Port Arthur, Ont.; Feb., 1903, to Feb., 1905, Freight Claims Agent, Pacific Division, Vancouver, B.C.; Feb., 1905, to Feb., 1906, Freight Claims Agent, Central and Western Divisions, Winnipeg; Feb. to Aug., 1906, City Freight Agent, Winnipeg; Aug., 1906, to June, 1908, Freight Agent, Fort William, Ont.; June to July, 1908, General Agent, Fort William, Ont.; July, 1908, to June, 1909, General Freight Agent, Kootenay and Boundary District, Nelson, B.C.; June, 1909, to Apr., 1911, General Freight Agent, Central Division, Winnipeg; Apr. to June, 1911, Division Freight Agent, Manitoba Division, Winnipeg; June, 1911, to July, 1914, Division Freight Agent, British Columbia Division, Vancouver; July, 1914, to Sept. 30, 1915, Assistant General Freight Agent, Vancouver, B.C.

#### Canadian Northern Ry. Through Service.

—The C.N.R. will probably start a freight service on its main line north of Lake Superior and also on the western portion of the line through British Columbia during October, thus giving through service between Toronto and the Pacific coast. The company's present construction terminus in B.C. is at Port Mann, on the north side of the Fraser River, four miles from New Westminster Bridge, but it has bought the Great Northern Ry.'s Port Kells branch over which it will run from Port Kells, 10.7 miles from New Westminster Bridge, to New Westminster and thence over the Great Northern track into Vancouver. It is probable that a through passenger service will be established in November.

**Railway Construction Laborers for the Front.**—A press report from Vancouver, B.C., states that Lt.-Col. A. E. Hodgins, who was formerly a Division Engineer on construction, National Transcontinental Ry., at Kenora, Ont., has been selected by the Government to superintend the recruiting of 1,100 specially selected men from railway construction camps and men who have had experience in railway construction and general mechanical work in the western provinces. It is stated that they will be utilized in Europe for trench work, road building and railway construction.

**The Dominion Bridge Co.** has opened an office in London, England, at 15 Dartmouth St., Westminster, S. W., with J. E. Bell as London Representative.



## Steel Frame Box Cars for the Russian Government.

The Russian Government has placed orders recently for a large number of freight cars to be delivered on short notice. These include 2,000 steel framed, inside sheathed 40 tons capacity box cars for grain and general service, now being delivered by the Eastern Car Company, New Glasgow, N. S. As will be noted from the accompanying illustrations the type of construction embodies a design of outside metal roof with runningboard and handrail attachments to suit European practice. Insulation is obtained by the use of a layer of matched boards, placed longitudinally and secured to furrings which are bolted on top of pressed steel carlines, which in turn are riveted to the side plate Z-bar. The roof sheets are applied in 20 sections per car of no. 24 galvanized steel having standing seams.

A structural steel side framing is employed. The side posts and diagonal braces, with the exception of the inner diagonal brace at bolster, which is formed from a 3-in Z-bar @ 8.4 lb. per ft., are all 3-in. Z-bars @ 6.7 lb. per ft. Side post and brace top connections to 4-in. Z-bar @ 8.2 lb. side plate are made with pressed steel connection plates. The 7 x 3½ x 7-16-in. rolled steel angle iron side sill is so located as to admit of the side posts and braces being riveted directly to same with three rivets at each crossing. The side and end lining is formed from 1¼ x 5¼ in. tongued and grooved boards, secured to each post by eight and to each brace by six button head bolts with nuts placed outside, so as to give a smooth interior. The top flange of the side plate Z-bar forms a sealed joint with the lining and at the bottom, the lining is extended to the lower edge of the flooring. A 2½ x 2 x 3-16-in. corner angle secured to the bottom board of the lining with button head bolts and having the wide flange resting on the top of the floor forms a grain tight joint all around the base of the car. The side doors are 6-ft. 5½-in. wide formed with a frame 2¼-in. thick, having two centre rails reinforced by ½-in. pressed steel brace. The corners of the door are

thick is secured over the flooring at the door opening. The flooring is formed by tongued and grooved boards 1¾-in. thick, bolted to the underframe members.

Pressed steel corner posts ¼-in. thick are provided in conjunction with 3-in. Z-bars @ 6.7 lb. for centre end posts and diagonal braces. The usual type of brake mast application, as used for cars operating on this continent, is followed, and a pressed steel platform and brace is included.

Hook type, drop forged couplings are used in conjunction with springs and cast follower cups, the stem of the coupling is extended and threaded, so as to accommodate one hexagon nut and a flat split key placed immediately behind the rear follower. The European type of disc buffer, 17 23-32-in. diameter, is used, same being bolted directly to the end sill.

The design of the underframe presents an unusual procedure, in that truss rods 2-in. in diameter, located 13¾-in. off centre, are employed in conjunction with an all metal underframe and steel side frame. The centre sills are 10-in. @ 21.8 lb. per foot rolled steel channels, placed 12¾-in. apart back to back, a full length top cover plate 20-in. by ¾-in. is provided, also a 4 x 3½ x ½-in. x 33¼ ft. rolled steel angle is riveted to the lower portion of the web of each centre sill. Bolsters are formed with 16 x ¾-in. cover plates, the top one only extending from side sill to side sill, the lower one just includes side bearing, all secured to pressed steel diaphragms flanged all around. Cast centre plate fillers between centre sills form a tie between the two bolster diaphragms. Two crossbearers placed 12¼ ft. apart centre to centre, provided with same design of diaphragms as bolster, and top and bottom cover plates 6 x ¾-in., form support for truss rod struts, which are 23¼-in. deep. Floor supports of pressed steel 4¼-in. deep are located as follows: one between bolster and crossbearer and one between crossbearers at centre of car. Longitudinal floor stringers of 3-in. Z-bars @ 6.7 lb. per ft. run full length of car, located 3 ft. 1 in. each side from centre of car. Press-

steel piping. All safety appliances are arranged to come within the clearance gauge of the German and Austrian Railways.

An arch-bar type of truck is employed in conjunction with axles having journals for 100,000 lbs. capacity cars, in spite of the fact that the cars are only built for 80,000 lbs. loading. The side frames are formed by top and bottom bars 5 x 1¼-in. steel and



End View of Steel Frame Box Car for Russian Government.

tie bar 5 x ⅝-in. steel. Centre plates are of malleable iron, body section bolted, truck section riveted to truck bolster, latter being formed by two 10-in. I-beams @ 25 lb. per ft. and fitted with 13-in. x ¾-in. top and bottom cover plates. Roller type side bearings located 2½ ft. off centre and arranged for ¾-in. clearance, are employed in con-



Steel Frame Box Car for Russian Government.

strengthened by angle plates; the top and bottom combination guide and stiffener strips, which are Z-shaped, are bolted to the door frame and engage three malleable iron bottom guides when the door is closed. Door hangers operate on an enclosed track as shown by the illustration. Grain doors of the removable type are provided and the usual type of steel threshold plate ¼-in.

ed steel diagonal braces, transmitting thrust from end sill buffer to centre sill are formed, so as to tie the bottom and centre sill construction together, as well as giving stiffness to the pressed steel end sill, which has a flange 12-in. wide lapping over the centre and side sill construction.

The ladder stiles are formed from angles with round iron treads; hand rails are of

junction with four-cluster type bolster springs located 6 ft. 8 5-32-in. centre to centre. Offset style of brake rigging is arranged to provide a distance of 15-in. from rail to centre of brake head. Column castings are designed with brake hanger lugs cast integral. Clearance between top of bolster and underside of top arch bar is maintained at ¾-in. centre pins, 2-in.



diameter, and fitted with top and bottom keys with cover provided inside of car to admit of their removal. Spring planks are formed from 13-in. channels @ 32 lb. per ft.

The following are the general dimensions:

Gauge	5 ft.
Length over buffers (free)	46 ft. 10 $\frac{1}{2}$ in.
Length over pulling face of couplers	44 ft. 5 $\frac{1}{2}$ in.
Length over end sills	42 ft. 11 $\frac{1}{2}$ in.
Width over side sills	9 ft. 1 in.
Width over side plates	9 ft. 1 $\frac{1}{2}$ in.
Width inside	8 ft. 10 in.
Width of door opening	6 ft.
Height top of rail to top of side plates	11 ft. 6 $\frac{1}{2}$ in.
Height top of rail to top of floor	4 ft. $\frac{7}{8}$ in.
Height top of rail to bearing face of centre plate	2 ft. 8 $\frac{3}{4}$ in.
Height top of rail over runningboard	12 ft. 10 $\frac{3}{8}$ in.
Height top of rail over runningboard hand	

Height top of rail over brake mast	15 ft. 3 in.
Height top of rail to centre of buffer	3 ft. 5 $\frac{1}{4}$ in.
Height inside at centre (clear)	8 ft. 2 in.
Height of side door opening	7 ft. 1 $\frac{3}{4}$ in.
Centre to centre of lamp brackets	10 ft. 2 1-16 in.
Centre to centre of trucks	30 ft. 9 in.
Centre to centre of buffers	5 ft. 10 $\frac{1}{2}$ in.
Truck wheelbase	6 ft. 3 in.
Total wheelbase of car	37 ft.
Capacity of car	80,000 lbs.
Capacity of axles (each)	38,000 lb. (Size of journal 5 $\frac{1}{2}$ in. by 10 in. M.C.B. std.)
Diameter of wheels	31 $\frac{3}{8}$ in. (M.C.B. std. cast iron chilled tread and flange).
Weight of wheels (each)	1,025 lb.

The cars are being shipped knocked down, the underframe all in one piece, with floor laid, and are routed via the Panama Canal to Vladivostok, where they will be assembled. The first vessel with 175 cars left Sept. 7.

conditions the manners of the old world that so well became him, and to the end of his long career retained the respect and honor of all. In the social directions in which he was interested, apart from his business affairs, he assumed with the quiet modesty which distinguished him, a role that gave those movements a stability and an influence which they would not otherwise have possessed."

### Location of Emergency Valve on Passenger Cars.

G. Spencer, Chief Operating Officer, Board of Railway Commissioners, sent the following memorandum to the Secretary of the Board, Sept. 15:—

Re Mr. Barry's letter of May 5 bringing up the question of having the conductor's valve or emergency valve placed in a prominent position and stencilled or otherwise indicated, so that in the event of an accident or emergency case cropping up any person in the car might operate the valve and stop the train. This case was considered and heard at Ottawa, Jan. 7, 1913. At that time no action was considered necessary. The different companies were to send in plans, specifications and data. These we have on file. In addition, I have had investigations made and find that the number of valves, their location, and the cord attachments are by no means standard. A great many of the valves have no cord attachments and the handles for operating them do not all work the same way.

The Master Car Builders' Association meeting at Chicago, in May of this year, recommended that

"All passenger equipment cars to be fitted with one or more conductors' valves. If one valve is used it is to be connected with a cord running the full length of the car. If the construction of the car does not permit the use of a cord running the full length, two valves should be used, one located at each end of the car, with a cord as long as practical."

After discussing the matter thoroughly with the different members of the staff in this department, I am of the opinion that it is very desirable in the interests of safety that the position of these valves be standardized, and that the cord or handle in the body of the car or compartment occupied by passengers be so placed and stencilled so that it will be understood what its functions are. These valves should be placed at the end of the car and outside of it, with a handle which trainmen can use in case of necessity and a cord attachment running to the inside of the car, as stated above. On cars with vestibules, the valves should be placed at the end of the vestibule over the doorway, and non vestibule cars on the end of the car (bulkhead) handle outside, and in both cases handle to operate so that it would open by being pulled up rather than pulled down, the cord from this valve handle to go through to the body of the car in all cases, and the handle on the cord in the body of the car to be stencilled "Emergency Valve."

On Sept. 18 the Secretary of the Board transmitted a copy of the memo to railway companies, and asked them to submit comments on it within 30 days.

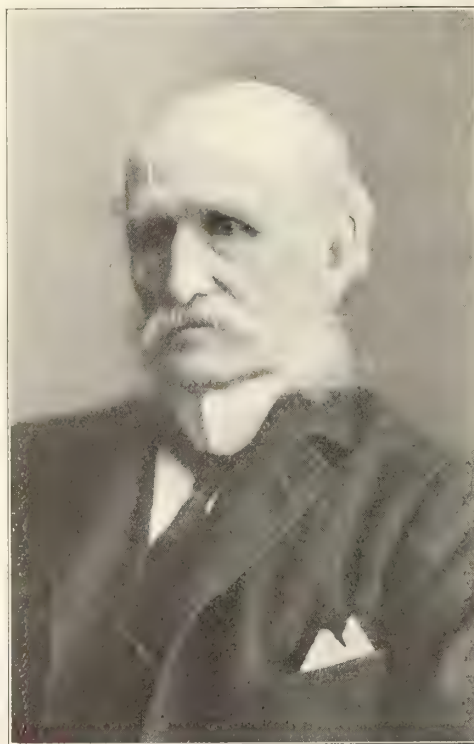
**Railway Extensions in South Africa.**—The Union Government of South Africa has completed railway connections with the lines connecting with Walfisch Bay, in the country formerly known as German Southwest Africa, but which has been absorbed into the Union, and has established the Government gauge throughout. The change on the last section of 32 miles was completed in 50 hours, thus constituting a South African record.

## Death of Harry Braithwaite Abbott at Vancouver.

Harry Braithwaite Abbott, M. Can. Soc. C.E., who died at Vancouver, B.C., Sept. 14, of pneumonia after only a few days illness, was the son of the late Rev. Joseph Abbott, first Anglican incumbent of St. Andrews, Argenteuil, Que., by his wife Harriet Elizabeth, daughter of the Rev. Richard Bradford, first rector of Chatham, Que. He was born at Abbotsford, Que., June 14, 1829, educated at the High School, Montreal, and at McGill University, and commenced his professional career on the engineering staff of the St. Lawrence and Atlantic Ry., now part of the Grand Trunk. On the completion of the line he was appointed resident engineer of one of the divisions. This position he resigned in 1857, to take the contract with the late C. Freer, on the Grand Trunk. Later he and Mr. Freer leased the Riviere du Loup section of the Grand Trunk, which they opened up and operated for a year. They also operated the Carillon and Grenville Ry. until its purchase by the Ottawa River Navigation Co. In 1864 Mr. Abbott assumed the control of the Brockville and Ottawa Ry., filling the position of Chief Engineer, and in 1872 he built the Carleton Place and Ottawa branch of the Canada Central Ry. He was for some time President and Managing Director of the former road, and Managing Director of the latter. In 1876 he organized the Eastern Extension Ry. Co., and was appointed Chief Engineer and Manager of Construction. His connection with the Canadian Pacific Ry. dated from 1882, when he was appointed Manager of construction of the Sault Ste. Marie Branch. After completing this work he was appointed Manager of Construction of the main line west from Sudbury. He was in charge of this division at the outbreak of the rebellion in the Northwest Territories, and the arrangements for the conveyance of the troops sent from the east for its suppression were carried out by him. After having served as Supervising Engineer, he was appointed in 1886 as the first General Superintendent of the C.P.R. in British Columbia, from which position he retired, March, 1897, when he was offered, but declined, an advisory position. He was admitted as a member of the Canadian Society of Civil Engineers in 1887, and served as a member of its council. During the Trent affair, he assisted in raising the 11th Battalion V.M. Argenteuil Rangers, and served under the command of his brother, the late Sir J. J. C. Abbott (afterwards Premier of Canada), for a considerable period, finally retiring with the rank of Major. He unsuccessfully contested Brockville in the Conservative interest at the Dominion general election in 1872, and East Algoma for the Ontario Legislature in 1886. He was a member of the Church of England. He married Margaret Amelia, daughter of the late

Mr. Justice Sicotte, and widow of C. Freer, who predeceased him by a number of years.

Mr. Abbott was one of the earliest residents of Vancouver, and as the chief C.P.R.



Harry Braithwaite Abbott, M. Can. Soc. C.E.

official there for a number of years occupied a leading position in its public and social life. He was Honorary Life President of the Vancouver Club and a member of many other local organizations. Besides being an expert rifle shot and billiard player, he was an enthusiastic fisherman, and keenly enjoyed golf. Only a week before his death, notwithstanding his 87 years of age, he attended a recruiting meeting.

The Vancouver Province says of him: "Mr. Abbott saw the townsite which he laid out grow into importance and go through those periods of sensation which may be compared to the maladies and slight fevers of childhood. He saw it grow into a city that attracted visitors and residents from all over the world, and in those days he occupied a position of leadership and much influence. Always a worker rather than a talker, he never joined the ranks of the loquacious, and he certainly never played to the gallery. He lived his life as a quiet Canadian citizen, who retained in the midst of the necessary rawness of western



# Canadian Railway AND Marine World

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## Progress of Rogers Pass Tunnel Con- struction, Canadian Pacific Railway.

The following table, for which we are in-  
debted to J. G. Sullivan, Chief Engineer,  
C.P.R., Winnipeg, shows the progress made  
from July 29 to Sept. 2, also the total pro-  
gress to Sept. 2. The figures give the num-  
ber of feet:

EAST END.		Progress.	Total.
Pioneer heading .....	Complete		10,740
Main heading .....	1,455		7,999
Main tunnel .....	690		5,906
WEST END.			
Pioneer heading .....	Complete		8,870
Main heading .....	1,400		8,869
Main tunnel .....	951		4,705

## Sir William Van Horne's Appreciation of Canadian Railway and Marine World.

Before starting the publication of the  
Railway and Shipping World (now Cana-  
dian Railway and Marine World) in 1898,  
its founder consulted several of the prin-  
cipal Canadian railway officials, among them  
Sir William Van Horne, who, while sympa-  
thetically friendly to the project, doubted  
whether it could be made a financial suc-  
cess. But from the issue of its first num-  
ber he evinced a keen interest in it, received  
it regularly, and took many occasions to  
recommend it. Only last year he wrote our  
Managing Director as follows:

"Montreal, Jan. 31, 1914.

"My dear Burrows,—I have just now been  
looking over the last number of your Cana-  
dian Railway and Marine World, and I am  
more than ever struck by the extraordinary  
amount and the high character of the in-  
formation it contains, which puts it on a  
par with or even beyond any railway jour-  
nal I know.

"I remember the doubts I expressed to  
you at the time you started it, and I feel  
bound to confess the extent of my mistake,  
and to congratulate you warmly on your  
splendid success.

"Sincerely yours,

W. C. VAN HORNE."

"P.S.—I am still confined to my room, but  
am beginning to hobble about on crutches.  
I have just found the photograph you ask  
for and send it herewith."

[The photograph referred to is the one  
reproduced on the first page of this issue.—  
EDITOR.]

The International Engineering Congress,  
which concluded its sittings at San Fran-  
cisco, Cal., Sept. 25, arranged for a series  
of excursions to be held subsequently so  
that the members could return to their  
homes by a number of routes. One of these  
trips was arranged from San Francisco,  
via Portland, Ore., to Seattle, Wash.,  
thence by steamship to Victoria and Van-  
couver, and by special train on the C.P.R.  
and its Minneapolis, St. Paul and Sault Ste.  
Marie Ry. and other connections to New  
York. The special train was timed to leave  
Vancouver Sept. 30, and it was expected to  
reach Chicago about Oct. 7.

The G. T. R. Stratford Division Patriotic  
Association, Palmerston Branch, has been  
formed to raise funds among the company's  
local employes, for patriotic purposes, by  
means of monthly contributions. C. For-  
rester, Superintendent, Stratford Division,  
Ontario Lines, G. T. R., has been elected  
President.

Dominion Government Elevators.—The  
completion of the Government elevator at  
Calgary, Alta., makes a chain of Govern-  
ment elevators from Calgary to the head of  
the lakes. The capacity of this elevator is  
about 2,500,000 bush.

## Putting Municipal and Private Utilities on a Par.

New evidence of the spreading tendency  
in the United States to subject all munici-  
pally owned utilities, like electricity and gas  
works, street railways, etc., to the same  
standards of operation and finance that are  
applied to public service companies under  
private ownership is seen in a recent de-  
cision of the California Railroad Commis-  
sion. The City and County of San Fran-  
cisco applied for permission to carry the  
Municipal Ry. tracks on Potrero Ave. at  
grade across two main tracks and a siding  
of the Southern Pacific Co. It further asked  
that the expense of maintaining the  
main line crossing be ordered divided be-  
tween the municipality and the railway and  
that the spur crossing be maintained by the  
railway. Special privilege was claimed by  
virtue of being a municipal corporation. In-  
vestigation showed that the railway had a  
franchise from the city permitting it to  
cross Potrero Ave., with its two main  
tracks, but that the siding existed only on  
sufferance. Permission was granted the  
city to make the crossing, but the entire ex-  
pense of construction and maintenance was  
imposed on the Municipal Ry., under the  
usual rule of imposing the burden of a grade  
crossing on the junior company. Municipal  
privilege was specifically denied, and cer-  
tain similar cases in Los Angeles were  
cited as precedent.

## The Ownership of a B. C. Logging Railway.

The question of the ownership of a log-  
ging railway from Powell Lake to the  
seacoast in British Columbia came before  
a court at Vancouver, Sept. 2, upon an ap-  
plication of the Powell River Co. for an in-  
junction to restrain the Jordan River  
Lumber Co., Elder Bros., and other lumber  
operators from using this railway. The  
plaintiff company owns the townsite of  
Powell River, which is crossed by the rail-  
way which runs from Powell Lake to Mal-  
aspina Strait. The Canadian-Puget Sound  
Co. had a 10 year contract for the use of the  
railway, and the plaintiffs desire that the  
defendant companies be enjoined from using  
the line. Counsel for Elder Bros., contended  
that the plaintiffs were putting quite a  
wrong interpretation upon the facts, as the  
line which was the property of the Canadian-  
Puget Sound Lumber Co., had been trans-  
ferred to his clients. Elder Bros. had been  
using the line since May, and were shipping  
150,000 ft. of logs daily over it. The hearing  
was adjourned.

Railway Lands Patented.—Letters patent  
were issued during August, for Dominion  
railway lands in Manitoba, Saskatchewan,  
Alberta and British Columbia, as follows,—

	Acres.
Calgary and Edmonton Ry. ....	319.00
Canadian Northern Ry. ....	643.00
Canadian Pacific Ry. ....	6.85
Edmonton, Dunvegan and British Col- umbia Ry. ....	36.10
Grand Trunk Pacific Branch Lines Co. ...	6.16
Qu'Appelle, Long Lake and Saskatch- ewan Rd. and Steamboat Co. ....	2,880.00

Total ..... 3,891.11

Railway Route Map Approved.—The Min-  
ister of Railways and Canals approved, on  
Sept. 1, the general location of a branch  
line of the Edmonton, Dunvegan and British  
Columbia Ry., from Spirit River Settlement,  
near Dunvegan, southerly to Grand Prairie  
Settlement, about 50 miles.

The G. T. R. Barrie Division Railwaymen's  
Association is making its first contribution  
of a fully equipped motor ambulance for  
European service, and is co-operating with  
the Red Cross Society in field comfort work.



# Transportation Appointments Throughout Canada.

The information under this head, which is almost entirely gathered from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

**Canadian Government Railways.**—J. A. HUMBLE has been appointed Claims Agent for the territory from Moncton to Campbellton and subdivisions (Intercolonial Ry.), Campbellton to St. Leonards (International Ry. of N. B.), Centreville to Gagetown (St. John & Quebec Ry.), and Moncton to Edmundston (National Transcontinental Ry.). Office, Moncton, N. B.

W. D. STEWART, heretofore foreman of erecting shop, Intercolonial Ry., Moncton, N. B., has been appointed Assistant to the General Storekeeper, with office for the present at Transcona, Man.

See also Intercolonial Ry. and National Transcontinental Ry.

**Canadian Northern Ry.**—The Quebec Grand Division and the Ontario Grand Division have been renamed Quebec Lines and Ontario Lines respectively.

W. A. KINGSLAND, heretofore Local Auditor, Quebec Lines, Quebec, Que., has been appointed General Superintendent, Quebec Lines, vice F. M. Spaidal, deceased. Office, Montreal.

JAMES ORR, heretofore in the General Traffic Manager's office, Toronto, has been appointed Assistant to the General Traffic Manager, there.

S. J. HUNGERFORD, Superintendent of Rolling Stock, has had his office moved from Winnipeg to Toronto, his jurisdiction having been extended over the whole system, as announced in a previous issue.

A. L. GRABURN, heretofore Mechanical Engineer, Toronto, has been appointed Assistant Superintendent of Rolling Stock. Office, Toronto.

Canadian Railway and Marine World for September contained particulars of the subdivision of the Ontario Grand Division into the Toronto District and the Lake Superior District and gave a complete list of the operating and maintenance officials thereon. Following are additional particulars in regard to the officials and their previous positions:

J. IRWIN, heretofore Superintendent, District 1, Western Division, Dauphin, Man., has been appointed Superintendent, Toronto District, Ontario Division. Office, Rosedale, Toronto.

G. COLLINS, heretofore Superintendent, Ottawa Division, Trenton, Ont., has been appointed Superintendent, Branch Lines, Toronto District, with jurisdiction over Picton, Maynooth, Tweed, Irondale and Kingston Subdivisions, reporting to the Superintendent, Toronto District. Office, Trenton, Ont.

W. C. MOORE, heretofore Master Mechanic, Ottawa Division, Trenton, Ont., has been appointed Master Mechanic, Toronto District, reporting to the Superintendent. Office, Trenton, Ont.

O. OGDEN, heretofore Supervisor of Track, Ottawa, Ont., has been appointed Supervisor of Track, with jurisdiction over Rideau and Brockville Subdivisions, Toronto District. Office, Trenton, Ont.

J. McDONALD, heretofore Supervisor of Track, Central Ontario, Quinte and Kingston Districts, Trenton, Ont., has been appointed Supervisor of Track with jurisdiction over Maynooth, Picton, Irondale and Tweed Subdivisions, Toronto District. Office, Trenton, Ont.

W. R. KELLY, heretofore Assistant Superintendent, Ottawa Division, Trenton, Ont., has been appointed Assistant Superintendent, Toronto Division, with jurisdiction over the Parry Sound, Orillia, Toronto

Terminals, Trenton, Rideau and Brockville Subdivisions. Office, Rosedale, Toronto.

J. D. EVANS, heretofore Division Engineer, Ottawa Division, Trenton, Ont., has been appointed Supervisor of Bridges and Buildings, with jurisdiction over Maynooth, Picton, Irondale and Tweed Subdivisions, Toronto District. Office, Trenton, Ont.

P. H. FOX, heretofore Chief Dispatcher, Trenton, Ont., has been appointed Chief Dispatcher, Toronto District. Office, Rosedale, Toronto.

G. P. MacLAREN, heretofore Division Engineer, Mackenzie, Mann & Co., Ltd., North Bay, Ont., has been appointed Division Engineer, Toronto District, reporting to Superintendent. Office, Rosedale, Toronto.

E. MYERS, heretofore Roadmaster, Trenton, Ont., has been appointed Supervisor of Track, with jurisdiction over Toronto Terminals, Parry Sound and Trenton Subdivisions. Office, Rosedale, Toronto.

J. H. McALPINE, heretofore Locomotive



P. J. Flynn,  
Superintendent, Districts 2 and 3, Central Division, Canadian Northern Railway.

Foreman, Winnipeg, has been appointed Master Mechanic, Lake Superior District, reporting to the Superintendent. Office, Parry Sound, Ont.

A. J. GAYFER, heretofore Division Engineer, Mackenzie, Mann & Co., Ltd., Port Arthur, Ont., has been appointed Trainmaster, with jurisdiction over Ruel, Oba, Long Lake and Nipigon Subdivisions, Lake Superior District, and also Division Engineer, Lake Superior District. Office, Hornepayne, Ont.

W. M. JACKLIN, heretofore Inspector of Tracklaying on Construction, Port Arthur, Ont., has been appointed Supervisor of Roadway, including track, bridges and buildings, with jurisdiction over Nipigon and Long Lake Subdivisions, Lake Superior District. Office, Hornepayne, Ont.

W. J. CURLE, heretofore Superintendent, Toronto Division, Toronto, has been appointed Superintendent, Lake Superior District, except Nipigon Subdivision. Office, Capreol, Ont.

J. E. CATHER, heretofore Chief Dis-

patcher, Rosedale, Toronto, has been appointed Chief Dispatcher, Lake Superior District, except Nipigon Subdivision. Office, Capreol, Ont.

J. R. AUDET, heretofore with Foley Bros. and Northern Construction Co. on C. N. R. construction, has been appointed Supervisor of Roadway, including track, bridges and buildings, with jurisdiction over Ruel and Oba Subdivisions, Lake Superior District. Office, Capreol, Ont.

E. HAYSTEAD, heretofore Supervisor of Track, Parry Sound, Ont., has been appointed Supervisor of Track with jurisdiction over Sudbury and North Bay Subdivision, Lake Superior District. Office, Capreol, Ont.

F. McKAY, heretofore Supervisor of Bridges and Buildings, Toronto, has been appointed Supervisor of Bridges and Buildings, with jurisdiction over Sudbury and North Bay Subdivisions, Lake Superior District. Office, Capreol, Ont.

J. E. NELSON, heretofore Superintendent, District 1, Central Division, Port Arthur, Ont., has been appointed Superintendent, Nipigon Subdivision, Lake Superior District. Office, Port Arthur, Ont.

T. J. BROWN, heretofore Chief Dispatcher, District 1, Central Division, Port Arthur, Ont., has been appointed Chief Dispatcher, Nipigon Subdivision, Lake Superior District. Office, Port Arthur, Ont.

P. J. FLYNN, heretofore Manager, Fort Garry Union Terminals, Winnipeg, has been appointed Superintendent, Districts 2 and 3, Central Division, Canadian Northern Ry., vice M. B. Murphy, transferred to Western Division. Office, Winnipeg.

P. SPENCE, heretofore Locomotive Foreman, Saskatoon, Sask., has been appointed Locomotive Foreman, Winnipeg, Man., vice J. H. McAlpine, whose appointment as Master Mechanic, Parry Sound, Ont., was announced in our last issue.

A. H. EAGER, Superintendent of Shops, Winnipeg, has been appointed Assistant Superintendent of Rolling Stock. Office, Winnipeg.

A. McCOWAN, General Car Foreman, Winnipeg, has been appointed Supervisor of Car Work, there.

H. W. ANDREW, coach yard foreman, Winnipeg, has been appointed General Car Foreman there, vice A. McCowan, promoted.

J. E. JOHNSTON, night coach foreman, Winnipeg, has been appointed coach yard foreman there, vice H. W. Andrew, promoted.

J. A. DAWSON is reported to have been appointed assistant yard foreman, Winnipeg, vice J. E. Johnston, promoted.

E. H. DREW has been appointed Sleeping and Dining Car Inspector, Western Lines, Sleeping, Dining and Parlor Cars and News Departments.

I. L. BOOMER, heretofore Superintendent, District 4, Western Division, Calgary, Alta., has been appointed Superintendent, District 4, Central Division, vice W. E. Roberts, transferred to Western Division. Office, Brandon, Man.

W. E. ROBERTS, heretofore Superintendent, District 4, Central Division, Brandon, Man., has been appointed Superintendent, District 1, Western Division, vice J. Irwin, transferred to Ontario Lines. Office, Dauphin, Man.

C. E. LEPARD, heretofore in Locomotive Foreman's office, Regina, Sask., has been appointed Divisional Storekeeper, Regina, Sask., vice J. Butterfield, enlisted for active service.

A. T. HANNAH, heretofore Assistant Foreman, Saskatoon, Sask., has been appointed Locomotive Foreman, Humboldt,



Sask., vice W. B. Steeves, transferred to Saskatoon, Sask.

W. B. STEEVES, heretofore Locomotive Foreman, Humboldt, Sask., has been appointed Locomotive Foreman, Saskatoon, Sask., vice P. Spence, transferred to Winnipeg.

M. B. MURPHY, heretofore Superintendent, Districts 2 and 3, Central Division, Winnipeg, has been appointed Superintendent, District 4, Western Division, vice I. L. Boomer, transferred to Central Division. Office, Calgary, Alta.

**Canadian Pacific Railway.**—GORDON SPROULE has been appointed acting Engineer of Tests, vice E. B. Tilt, who has resigned from the service. Office, Montreal.

E. ELEY, heretofore Divisional Car Foreman, North Bay, Ont., has been appointed Master Car Builder, Eastern Lines, vice F. B. Zercher, who has left the service. Office, Montreal.

W. M. KIRKPATRICK, Assistant Freight Traffic Manager, Montreal, having been appointed an officer in the 87th Overseas Battalion, Canadian Grenadier Guards, the following four appointments have been made until he returns to the company's service:

H. E. MacDONELL, heretofore General Freight Agent, Eastern Division, Montreal, will perform the present duties of the Assistant Freight Traffic Manager. Office, Montreal.

E. N. TODD, heretofore Division Freight Agent, Eastern Division, Montreal, will perform the present duties of the General Freight Agent, Eastern Division, vice H. E. MacDonell. Office, Montreal.

A. O. SECORD, heretofore District Freight Agent, Ottawa, Ont., will perform the present duties of the Division Freight Agent, Eastern Division, vice E. N. Todd. Office, Montreal.

J. J. KELLY will perform the present duties of the District Freight Agent, Ottawa, Ont., vice A. O. Secord.

G. J. FOX, heretofore Yardmaster, Swift Current, Sask., has been appointed Yardmaster, Fort William, Ont.

F. PLAYER has been appointed station master, Moose Jaw, Sask., vice J. T. Turner, promoted.

J. T. TURNER, heretofore station master, Moose Jaw, Sask., has been appointed Yardmaster, Swift Current, Sask., vice G. J. Fox, transferred.

J. GRAHAM, heretofore Assistant Roadmaster, North Bend, B.C., has been appointed Roadmaster, Nelson, B. C.

J. A. MARTIN has been appointed Assistant Manager, Ocean Services. Office, Royal Liver Building, Liverpool, England.

R. E. LARMOUR, heretofore Assistant General Freight Agent, Vancouver, B. C., has been appointed General Agent, Freight Department, New York, vice W. F. Stevenson, deceased. Office, 1550 Woolworth Building.

**Grand Trunk Pacific Ry.**—W. E. BELL has been appointed acting Chief Assistant to Manager of Telegraphs, G.T.R. and G.T.P.R., during absence on leave of A. P. Linnell. Office, Montreal.

C. E. BROOKS, heretofore acting Superintendent of Motive Power, has been appointed Superintendent of Motive Power, and will also assume the duties of Master Car Builder, J. L. Hodgson having resigned to enter National Transcontinental Ry. service. Office, Transcona, Man.

A. McTAVISH, heretofore Locomotive Foreman, Biggar, Sask., has been appointed Locomotive Inspector, to look after G.T.P.R. motive power equipment turned out of the Transcona shops by the National Transcontinental Ry.

E. HACKING, heretofore Car Foreman, Prince George, B.C., has been appointed

General Car Foreman, to look after G.T.P.R. car equipment turned out of the Transcona shops, now operated by the National Transcontinental Ry.

R. P. GRAVES, heretofore Resident Engineer, Fort William, Ont., has been transferred west of Winnipeg.

H. DARBY has been appointed acting Locomotive Foreman, Biggar, Sask., vice A. McTavish, promoted.

J. A. BRYANT, heretofore General Yardmaster, Mission Yard, Fort William, Ont., has been transferred to Edmonton, Alta.

J. A. BRYANT, heretofore General Yardmaster, Fort William, Ont., has been appointed Yardmaster, Edmonton, Alta., vice C. W. Sweet, assigned to other duties.

C. A. MUNRO has been appointed Car Foreman, Prince George, B.C., vice E. Hacking, promoted.

The following station agents have been appointed,—Fort Qu'Appelle, Sask., A. G. Redford; Mawer, Sask., —. Pelland; Frobisher, Sask., J. R. Wilson; Irma, Alta., H. F. Jones; Viking, Alta., T. W. MacKenzie; Calgary, Alta., J. L. Dodds.

**Grand Trunk Ry.**—W. E. BELL has been appointed acting Chief Assistant to Manager of Telegraphs, G.T.R. and G.T.P.R., during absence on leave, of A. P. Linnell. Office, Montreal.

The following station agents have been appointed,—St. Rosalie Jct., Que., passenger, J. A. Tardif; Goodwood, Ont., J. F. Reid; Limehouse, Ont., W. L. Milliere; Port Dover, Ont., W. A. Murray; Harrisburg, Ont., H. W. Sussex; Centralia, Ont., P. B. Wade.

Through the utilization of an unconfirmed item, published in an English paper, it was announced in our last issue that E. J. Wearing had been appointed acting General Assistant, G.T.R. and Canadian Express Co., Liverpool, England, vice W. Cuthbertson, deceased. We are officially advised that the position of General Assistant has been abolished, temporarily at least. E. J. WEARING is Passenger Agent, G.T.R., and has also been appointed acting General Agent, Canadian Ex. Co., and J. M. CHARLES is Freight Agent, G.T.R. Offices, 20 Water St., Liverpool, England.

**Intercolonial Ry.**—C. W. BLEAKNEY is reported to have been appointed foreman of machine shop, Moncton, N.B., vice Jas. Starkey, transferred.

J. STARKEY, foreman of machine shop, Moncton, N.B., is reported to have been appointed foreman of erecting shop there, vice W. D. Stewart, appointed Assistant to General Storekeeper, Canadian Government Railways, Transcona, Man.

**National Transcontinental Ry.**—H. BAILEY, formerly Bridge and Building Master, Dominion Atlantic Ry., Yarmouth, N.S., has been appointed Bridge and Building Master, District 1, N.T.R., vice P. J. Henselwood, resigned. Office, Parent, Que.

J. E. SIMPSON has been appointed Roadmaster, Quebec and Fitzpatrick Subdivisions, vice A. Beauseigle. Headquarters, Parent, Que.

M. J. SHERIDAN has been appointed acting Roadmaster between mileage 109.5, Cochrane Subdivision, and mileage 63.4, Grant Subdivision, vice J. Wilson. Headquarters, Grant, Ont.

P. BARNARD has been appointed Roadmaster, Graham Subdivision, Redditt to Graham. Headquarters, Graham, Ont.

D. CAMPBELL has been appointed Bridge and Building Master, Winnipeg to Fort William. Headquarters, Fort William, Ont.

A. M. MACGILLIVRAY has been appointed Resident Engineer, Winnipeg to Fort William, vice R. P. Graves. Office, Fort William, Ont.

R. A. POSTANS has been appointed Road-

master, Lake Superior Branch, Fort William to Graham. Headquarters, Fort William, Ont.

C. H. LUNDGREN has been appointed General Yardmaster, Mission Yard, Fort William, Ont., vice J. A. Bryant.

J. L. HODGSON, heretofore Master Car Builder, Grand Trunk Pacific Ry., has been appointed General Car Foreman, N.T.R., in charge of Car Department, Transcona, Man., and of Car Department at divisional points, Transcona to Fort William inclusive. Office, Transcona, Man.

J. A. MITCHELL has been appointed General Foreman in charge of Motive Power Department, Transcona, Man.

G. E. McGUIRE has been appointed General Yardmaster, Transcona, Man.

H. McCORMICK has been appointed Roadmaster, Winnipeg Subdivision, Winnipeg to Redditt. Headquarters, Transcona, Man.

R. KING, heretofore Agent, C.P.R., Cornwall, Ont., has been appointed Assistant Superintendent, District 3, N.T.R. Office, Winnipeg, Man.

D. W. STEEPER, heretofore Trainmaster, G.T. Pacific Ry., Graham, Ont., is now engaged as a passenger conductor, N.T.R., between Graham, Ont., and Winnipeg, Man.

Dr. JOHN M. LENEY has been appointed Assistant Chief Medical Officer, with jurisdiction from Cochrane to Winnipeg and from Lake Superior Jct. to Fort William. Office, Winnipeg.

**New York Central Rd.**—The position of Superintendent of Rolling Stock has been created for the district west of Buffalo, N. Y., by separation from the Motive Power Department, and all employees and appurtenances connected with these departments have been separated for maintenance and operation accordingly.

W. O. THOMPSON, heretofore District Master Car Builder, East Buffalo, N.Y., has been appointed Superintendent of Rolling Stock, West of Buffalo, N.Y. Office, Cleveland, Ohio.

D. R. MacBAIN, Superintendent of Motive Power, West of Buffalo, continues in that position.

**St. John and Quebec Ry.**—W. M. DUNLOP, Chartered Accountant, Ottawa, Ont., has been appointed Commissioner for adjusting claims against the company, by the New Brunswick Government, which has taken over the line, owing to default.

**Thousand Islands Ry., Oshawa Ry.**—H. W. COOPER, heretofore Secretary-Treasurer, has been appointed Manager, vice J. F. Chapman, deceased. Office, Gananoque, Ont.

J. H. VALLEAU has been appointed Secretary-Treasurer, vice H. W. Cooper, appointed Manager. Office, Gananoque, Ont.

**Wabash Rd.**—W. A. HOPKINS, heretofore Division Freight Agent, Toledo, Ohio, has been appointed General Live Stock Agent, vice J. L. Harris, resigned to accept service elsewhere. Office, St. Louis, Mo.

R. A. BROWN, heretofore Travelling Freight Agent, Buffalo, N.Y., has been appointed Commercial Agent, Cleveland, Ohio, vice D. E. Gilbert, promoted.

T. A. SHERWOOD, heretofore Travelling Freight Agent, Memphis, Tenn., has been appointed Travelling Freight Agent, Buffalo, N.Y., vice R. A. Brown, promoted.

**Winnipeg Joint Terminals.**—H. J. HUNT, heretofore Trainmaster, has been appointed acting Terminals Manager, vice P. J. Flynn, resigned to enter C.N.R. service. Office, Winnipeg.

W. McAULEY, heretofore General Yardmaster, has been appointed Trainmaster, vice H. J. Hunt, promoted.



## Railway Development.

### Projected Lines, Surveys, Construction, Betterments, Etc.

**Alberta and Great Waterways Ry.**—J. D. McArthur, President, is reported to have said Sept. 3 that track laying would be started immediately on the section of the line from Lac la Biche to Fort McMurray, 144 miles, and that, as the grading was practically completed, track laying was expected to be completed by Dec. 31. The line from Carbondale, the junction with the Edmonton, Dunvegan and British Columbia Ry., to Lac la Biche, 114 miles, is reported to be practically ready for traffic. (Sept., pg. 341.)

**Alberta Oil Fields.**—E. A. Cunningham, of the Alberta Petroleum Consolidated Co., Calgary, is reported to have said recently:—"The key to the oil situation is transportation and refining. As to the former we have a railway planned to tap the northern field, and we are working to get thing started."

**Athabasca and Fort Vermillion Ry.**—The preliminary survey being made for a projected railway from Athabasca Landing to Fort Vermillion, is reported to have located two possible points for the building of a bridge across the Athabasca River, and to have reached Wabiscaw, on the survey for the best route to Fort Vermillion. C. F. Law, who represents the D. A. Thomas interests in Vancouver, and A. C. Galbraith, Chief Engineer of the A. and F. V. R., left Edmonton, Alta., Aug. 27, for Fort Vermillion, where they expect to meet the survey party. The other projects in which the Thomas interests are concerned are the Pacific, Peace River and Athabasca Ry., and the Peace River Tramway and Navigation Co. (Sept., pg. 341.)

**Burrard Inlet Tunnel and Bridge Co.**—At the annual meeting of the shareholders in North Vancouver, B. C., Sept. 8, it was reported that none of the plans submitted by the Board were acceptable to the Provincial Government, without considerable alterations, and that the Government would not agree to any work being started on the bridge until complete arrangements had been made for the money necessary to finish it. The funds available amount to \$1,500,000, while the lowest tender on the present plans is \$1,744,831. The Dominion subsidy is contingent upon the bridge being completed by Aug. 1917, and the company's present charter expires in April 1916. It was decided to apply for an extension of time for construction of the bridge, and for a renewal of the Dominion subsidy. The directors for the current year are:—F. L. M. Carter-Cotton, President; Mayor Taylor, Vice President; Aldermen Woodside, McLurg, Foreman and Councillor Loutet. These represent the several municipalities interested in the construction of the bridge.

**Central Canada Ry.**—J. D. McArthur, President, is reported to have said in an interview, Sept. 3, that all the grading was under way to the proposed crossing of Peace River, and that sufficient progress had been made to warrant him in stating that track laying would be completed by the end of the year. The line starts at McLennan, on the Edmonton, Dunvegan and British Columbia Ry., and was completed to mileage 28 in 1914, track being laid on this mileage in the spring. The grading now in progress consists of 22 miles of rather difficult work. (July, pg. 255.)

**Dominion Government Railway to Hudson Bay.**—The contractor, J. D. McArthur, is reported to have said in an interview recently, that the accident early in the summer, when

the trestle bridge over Armstrong Lake gave way, had not interfered materially with the summer's work on the line. When the two big bridges are completed over the Nelson River, which it is expected will be the case next spring, he anticipates that there will be very little work left to be done to complete the line for operation. At the time of the accident a locomotive and a track layer were precipitated into the lake, these have been definitely located, and it is expected that they will be recovered during the winter.

From the experiences of the past summer it is believed that navigation of the Hudson Strait and Bay will be possible in July. The supply boats have left the wireless equipment for installation at several points on the straits and bay. Five dipper and clam shell dredges have been built at Port Nelson for harbor dredging work. Good progress is being made with the laying out of the railway terminals at Port Nelson, the work being reported to be in charge of Engineer Bayfield, who is said to have replaced Engineer McLachlan, formerly in charge. (Sept., pg. 348.)

**Edmonton, Dunvegan and British Columbia Ry.**—Track was reported, Sept. 3, to have been laid on the temporary bridge across the Big Smoky River, mileage 290 from Edmonton, Alta., and is being continued to the Spirit River, a further distance of 67 miles. Grading on the branch line to Grande Prairie, about 60 miles, let to J. Timothy, is reported to be well forward, and it is expected to have track laid on it by Dec. 31.

The permanent bridge over the Big Smoky River is in course of erection by the contractor for the steelwork, the Dominion Bridge Co. It will consist of 85 ft. deck plate girder approach spans, six 128 ft. deck truss spans, and one 125 ft. through truss span which will be erected over the navigable channel. (Aug., pg. 304.)

**Grand Trunk Ry.**—The Montreal City Council has adopted two reports of its railway engineer recommending that the Lachine, Jacques Cartier and Maisonneuve Ry., a G. T. R. subsidiary, be permitted to cross about 50 streets in the north end of the city. This is a projected line through the Maisonneuve manufacturing district, and considerable difficulty has been experienced in bringing the negotiations for the right of way to a successful issue. (Sept., pg. 345.)

**Great Northern Ry. (U. S. A.)**—Construction is reported to be in progress in the section of the Vancouver, Victoria and Eastern Ry. branch near Grand Forks, B. C., on a bridge over the North Fork Canyon. The new bridge will be 662 ft. long, on stone and concrete abutments. About 2,000 ft. of track has been laid to connect the branch with the C. P. R. branch to the Granby Smelter, pending the reconstruction of the bridge.

That plans for the G. N. R. station on the reclaimed land at False Creek, Vancouver, are being prepared in that city by F. Townley, was reported to the bridges and railway committee of the city council at a recent meeting. Under the Board of Railway Commissioners' order dated June 2, construction on the new station is to be started within six months. (Sept., pg. 349.)

**Intercolonial Ry.**—During the summer a large amount of ballast has been laid on the lines on Cape Breton Island, between Point Tupper and Sydney, while the bridges have all been overhauled and repaired. A new

timber bridge is being built at Grand Narrows, which will raise the track 4 ft. above the present level. The bridge is expected to be completed early in November.

The new station at Humphreys, N. B., was reported, Sept. 10, to be nearly completed, and the new freight shed at Levis, Que., replacing the one burned down, was expected to be completed Oct. 31. (Sept., pg. 341.)

**The International Union Terminals Co. of Seattle, Wash.**, through A. F. Gillies and E. C. Matheson, laid a proposal before the Bridge and Railway Committee of the Vancouver City Council, Aug. 30. The company proposes to lay out a union terminal on Burrard Inlet, between Main St. and Heatley Ave., with tunnels to False Creek, and an electric railway from Vancouver to Seattle, Wash., at which place the company plans to lay out a similar terminal. The officers of the company, it is stated, are: President, J. C. Eden; Vice President, M. McDougall; Treasurer, J. McMasters; and Secretary, F. C. Jackson, all of Seattle. The cost of the entire Canadian end of the project is mentioned as \$50,000,000, and the first unit would involve an expenditure of \$15,000,000. An option, it was said, had been secured on the Hastings Mill site. The financial end of the project would be handled by the Stone and Webster interests of Boston, Mass., and it was sought to arrange with the Western Canada Power Co. for the necessary power.

**Kettle Valley Lines.**—The extension from the Coquihalla summit to Hope on the Fraser River, is expected to be completed by Nov. 30. Track is being laid, and the erection of the 7,500 lineal feet of snow sheds is well forward. Track laying is being gone on with from the Hope end, and is reported to have reached Ladner Creek, where a steel bridge is being built. The bridge across the Fraser River at Hope has been completed, and the tracks connecting with the C. P. R. have been laid. (Sept., pg. 341.)

**Pacific Great Eastern Ry.**—It is expected to have the track laid and the line completed from Squamish, the seacoast terminal, as far as Clinton, B. C., this autumn. It is hoped to have track laid to the Hundred Mile House by Dec. 31. From Fort George about 50 miles of grading has been completed southerly, and it was reported, Sept. 5, that work on this section was at a standstill. (Sept., pg. 341.)

**Prince Edward Island Ry.**—Tenders are under consideration for the erection of a station building, water tank, locomotive house, transfer platform, standpipe pit, ash-pit and turntable foundations for the car ferry terminal at Carleton Point, P. E. I. The carrying out of this work will complete the works necessary for the operation of the car ferry to the mainland at Cape Tormentine, N. B.

The car ferry terminal works at Cape Tormentine are reported to be nearly completed. The last crib of the 1,070 ft. built was put in position recently, and is practically an extension of the previously existing breakwater. In this cribwork about 3,000,000 ft. of lumber, board measure, and 120,000 tons of stone have been used. As soon as the last crib is completed the work of driving the pile fender for the ferry will be gone on with. Two dredges are at work within the enclosed area dredging the approach to the ferry landing. A breakwater nearly 600 ft. long, and containing about 140,000 tons of stone is being built. The substructure work is also in a forward condition. The work is being carried out by A. T. Markle and the O'Brien and Doheney Co., with the Lynn Brennan Co. as subcontractors. F. P. Frapp, Ottawa, is Engineer in charge, with J. McLean as Assistant Engineer on the work.



**St. John and Quebec Ry.**—Under the act passed by the New Brunswick Legislature in the spring, the company's charter has been taken over by the Provincial Government, and a new board of directors has been appointed to complete the construction. The first work taken in hand by the new board is the adjustment and settlement of outstanding claims arising out of the construction of the 120 miles, between Gagetown and Centreville. This section is being operated by the Canadian Government Railways, under a contract. The uncompleted section of the line extends from Centreville to Grand Falls, and from Gagetown southerly to St. John. On this latter section three big bridges across the Kennebecasis and the St. John Rivers are necessary, the cost of which is to be borne by the Dominion Government.

A party of St. John business men visited the sites of the proposed crossing at the Mistake, Sept. 9. Borings are being made there, under the direction of the Provincial Government, to decide which site will be adopted. (Sept., pg. 341.)

**St. John and Quebec Ry.**—A meeting of the shareholders was held in the Provincial Government Buildings, Fredericton, N. B., Sept. 8, when the directors appointed recently by order-in-council, were elected directors for the current year. The directors subsequently elected the following officers: President, I. R. Todd, St. Stephen; First Vice President, R. O'Leary, Richibucto; Second Vice President, W. S. Fisher, St. John; Treasurer, J. D. Palmer, Fredericton; Secretary, E. Girouard, Moncton. Each of the five directors appointed has thus been elected to an office. It is said that as soon as questions connected with the adjustment of outstanding accounts are settled the directors will give consideration to the letting of contracts for the construction of the sections of the line from Centreville to Grand Falls, and from Gagetown southerly.

**Toronto, Hamilton and Buffalo Ry.**—G. A. Mountain, Chief Engineer of the Board of Railway Commissioners, visited Hamilton, Sept. 11, and inspected the King St. West bridge, which the city is asking to have widened and strengthened. The present bridge is 30 ft. wide, and the city desires that it be made 55 ft. wide. Mr. Mountain will report as to the plans, and the Board may make an order as to what, if anything, can be done, and how the cost is to be apportioned between the company and the city. (June, pg. 212.)

**Toronto Terminals Co.**—An order-in-council was passed at Ottawa, Sept. 4, providing for the building, at the cost of the Dominion Government, of the east wing of the new union station in Toronto, which will be used for post office purposes. It is said that there is now nothing in the way of an early start being made upon the erection of the new building. (Sept., pg. 349.)

**Gopher Extermination in the West.**—The Canadian Northern Ry. has since the early with instructions for its use, for the destruction of gophers in the districts through which it operates. The poison is mixed with wheat of inferior grade, which in most cases is supplied by local elevator companies, but where this cannot be arranged, wheat is purchased. Records of the cost, time, territory covered, and effectiveness of the poison are kept, which up to date show that the efforts made have proved efficacious. In most municipalities bylaws have been passed requiring farmers to destroy gophers on their lands, and the co-operation of the railway has been of considerable benefit in the efforts to exterminate the pest.

## Freight Rates on Steel from the United States to Saskatchewan and Alberta.

Early in September, S. J. McLean, one of the Board of Railway Commissioners, gave the following opinion on the complaint of the Saskatchewan Bridge and Iron Co., of Moose Jaw, Sask., Chief Commissioner Sir Henry Drayton, concurring:—

The applicant desires to tender for building a bridge at Calgary, Alta. The situation is that steel is brought from Pittsburg, Pa., via. Minnesota Transfer (St. Paul) over the "Soo" line to Moose Jaw, where it is fabricated and then shipped on to Calgary. The applicant complains of being at a disadvantage of 12c as compared with the movement via. Winnipeg. Steel is shipped from Pittsburg via. Minnesota Transfer to Winnipeg, and thence shipped to Calgary. The rate situation is as follows:

Pittsburg-Minnesota Transfer (Commodity) .....	38.2c
Minnesota Transfer-Winnipeg (Class) .....	32 "
Winnipeg-Calgary (Class) .....	56 "
Through .....	126.2 "
Pittsburg-Minnesota Transfer (Commodity) .....	38.2c
Minnesota Transfer-Moose Jaw (Class) .....	64 "
Via Portal (Soo Line)	
Moose Jaw-Calgary (Class) .....	36 "
Through .....	138.2 "

Difference against Moose Jaw—12 cents.

Omitting the movement from Pittsburg to St. Paul, which is common both to the movement to Winnipeg and Moose Jaw, the situation is that the total mileage from St. Paul to Calgary, via. Winnipeg, is 1,295 miles; and from St. Paul to Calgary, via. Moose Jaw, it is 1,168 miles; that is to say, the movement by way of Winnipeg is 127 miles longer. The rate from St. Paul to Winnipeg is 32c. While the distance from St. Paul to Winnipeg is 458 miles, the rate is not made on that distance. The policy of the United States lines is to give Minneapolis and St. Paul the same rate as Duluth. Duluth is 397 miles from Winnipeg; consequently the St. Paul rate is made on this shorter mileage. The "town" tariff rate is not applicable on the movement from St. Paul to Emerson, nor is it applicable on the movement from Emerson to Winnipeg. If it had been applicable for the distance of 458 miles, the rate would have been 37c. If the traffic were moving the same distance in Canada between two points covered by the prairie scale, and if neither of these points was a "town" tariff point, the rate on the prairie mileage scale would be 44c. It is thus apparent that as the result of the Duluth rate controlling the St. Paul rate, the actual rate is 5c less than would have applied on the actual movement from St. Paul if the Canadian "town" tariff rate had been applicable, and 12c less than would have been the case had the Canadian standard prairie scale applied. From Moose Jaw to Calgary, the distance is 438 miles. The "town" tariff rate applies. Consequently, in respect of the movement out of Winnipeg and a movement out of Moose Jaw, both are on the same basis, subject, of course, to the effect exercised by the tapering of the rate on the longer haul. On the movement from St. Paul to Moose Jaw, the "town" tariff rate does not apply. Of the total distance of 730 miles between these points, 168 miles, that is the distance between North Portal and Moose Jaw, is within Canada. On the 562 miles from St. Paul to the boundary, a higher rate basis applies than on the movement from Winnipeg. There is no "town" tariff from North Portal; and even if there were the advantage of the "town"

tariff would not be applicable unless the steel were stopped in transit at North Portal to be fabricated and shipped beyond. It may be noted that the rate charged is 2c higher than would be the case on the same mileage under the standard prairie scale.

To sum up the matter, the situation when analyzed is as follows: There is a low rate basis into Winnipeg which is brought about by the policy of the United States lines in making the Minneapolis and St. Paul-Winnipeg rate on the basis of the shorter mileage via Duluth. This rate is divided on percentages, and for the 66 miles from Emerson to Winnipeg the Canadian carrier receives 32½% of the rate, or 10.4c. At the same time, the haul by the Canadian carrier represents 14% on mileage. The rate being controlled as indicated, it happens that the division received, viz., 10.4c., is practically identical with the "town" tariff rate for the same distance, viz., 10.5c. On the movement from St. Paul to Moose Jaw, the factor of a correlated shorter mileage point is not present to hold down a portion of the rate. On the movement from the Canadian boundary at North Portal to Moose Jaw, 168 miles, no "town" tariff is applicable. On a movement of the same distance from a Canadian point into Winnipeg, no "town" tariff would be applicable. On the movement via Winnipeg, the "town" tariff is effective from Winnipeg to Calgary, 837 miles. On the movement via Moose Jaw, the "town" tariff is effective only from Moose Jaw to Calgary, 438 miles. Of the movement to Moose Jaw, 562 miles is within United States territory. The rate is higher than in Canada. The situation is, then, that for a haul of 730 miles to Moose Jaw, the rate charged is higher than it would be under the standard mileage of the prairie scale. There is no difference in rate treatment in respect of movements in Canada as between similar movements into and out of Winnipeg on the one hand and into and out of Moose Jaw on the other. There is a higher rate basis on the haul in the United States. Here the Board has no jurisdiction.

## Canadian Pacific Railway Construction, Betterments, Etc.

**North Toronto Union Station.**—The corner stone of the new union station at North Toronto was laid Sept. 9, by Mayor Church, A. D. MacTier, General Manager, Eastern Lines, representing the C. P. R. A full illustrated description of the new building appeared in our August issue, page 298.

**Alberta Division.**—W. A. James, Division Engineer of Construction, Western Lines, arrived in Lethbridge, Aug. 25, and proceeded to Foremost, to take charge of track laying on 25 miles of the grading completed easterly on the Weyburn-Lethbridge line. The work is expected to be completed early in October.

A petition from farmers resident in the Kipp-Lomond district of Alberta has been forwarded to the C. P. R. by the Lethbridge Board of Trade, asking for the grading of an extension from Kipp to Lomond, the farmers offering to give one week's work of a man and team each. (Sept., pg. 349.)

**The Roadmasters' and Maintenance of Way Association's annual convention** was held at Chicago, Ill., Sept. 7 to 10. Following are the officers for the current year:—President, C. King, Jamaica, N. Y.; First Vice President, M. Burke, Chicago, Ill.; Second Vice President, A. Grills, General Roadmaster, G.T.R., St. Thomas, Ont.; Secretary, L. C. Ryan, Sterling, Ill.; Treasurer, W. H. Kofmehl, Elgin, Ill.



# Orders by the Board of Railway Commissioners for Canada.

The Board, with June 1901, Canadian Railway and Marine World has published in each issue a list of orders passed by the Board of Railway Commissioners, so that subscribers will be kept posted on paper have a continuous record of the Board's proceedings. No other publication has done this.

The index, which of orders, immediately following the numbers, are those on which the orders were made.

Order 24102, as summarized in Canadian Railway and Marine World in September, has been cancelled and the following order substituted:

24102. Aug. 19.—Allowing increased rates on pulpwood to Mechanville, N.Y., via Boston & Maine R.R., on Supplement 1 to C. P. R. joint freight tariff, C.R.C. no. 1-2817, and Supplement 1 to G.T.R. Joint Freight Tariff, C.R.C. 288, supplements to become effective not earlier than Nov. 1, and rescinding order 23020, Dec. 22, 1911.

24104. Aug. 19.—Ordering G.T.R. to switch cars in its service, and to interswitch cars in the service of any other railway with which it has connection at Cobourg, to and from track on Esplanade alleged to be owned by the Town, when desired to do so by the Mayor in writing, in general terms on condition that G.T.R. shall not be responsible for collection from consignees of freight charges nor for damages to cars nor loss of contents while on siding, unless caused by or resulting from negligence of G.T.R., its servants or agents, and rescinding order 21976, June 12, 1914.

24105. Aug. 19.—Amending order 21181, Jan. 1901, re provision of signalmen for interlocking plant at crossing by Campbellford, Lake Ontario and Western Ry. (C.P.R.) of G.T.R., at Cobourg, Ont.

24106. Aug. 19.—Allowing correction of error in plan, profile and book of reference to show land from station 5+60 to station 9+62, shown bordered yellow on plan, as being owned by the G.T.R., shown bordered green on revised plan marked A, instead of as being owned by Department of Railways and Canals.

24107. Aug. 19.—Relieving G.T.R. from providing further protection at second crossing south of Hespeler, Ont.

24108. Aug. 19.—Authorizing Alberta & Great Waterways Ry. to join its track with Edmonton, Dunvegan & British Columbia Ry.

24109. Aug. 19.—Authorizing Dominion Government, for Province of Ontario, to build highway crossing over Canadian Northern Ry. west of North Bay, about half a mile west of Meadowside, Pedley Tp., Ont.

24110. Aug. 16.—Authorizing London Railway Commission to build team tracks on north side of Bathurst St., from junction of London & Port Stanley Ry., on Bathurst St., near Burwell St., east to Adelaide St., London, Ont., no rail to be laid within 16 ft. south of street line; and authorizing it to build a track on north half of Bathurst St., from Richmond St. west to Thames St., track to be planked between rails to 18 in. on either side; track not to be used for storage purposes, and car not to be loaded on the highway.

24111. Aug. 21.—Authorizing C.P.R. to use bridge 242 over the Otonabee River, near Peterborough, Ont.

24112. Aug. 21.—Authorizing G.T.R. to use bridge over C.P.R. at Myrtle, Ont.

24113. Aug. 21.—Authorizing C.P.R. to use bridge 3416, Toronto Subdivision, at Cavan, Ont.

24114. Aug. 24.—Ordering G.T.R. forthwith to move station building at Mimico, Ont., from the present location to its original position, as near as may be to the south of track; station to be cleaned and put in proper order for use.

24115. Aug. 21.—Ordering Canadian Northern Ry. to build extra pen, of the same size as present one, at Waseca, Sask.; to be completed by Sept. 15.

24116. Aug. 20.—Approving changes in location of Montreal and Southern Counties Ry., from station 1765+05.9 to station 1788+02.9, St. Paul d'Abbotsford Parish, and authorizing the M. & S. C. R. to build across Jackmann's Road, Rouville County, Que.

24117. Aug. 20.—Approving plan and specifications showing work to be done on Wilson-Mathers Drain under G.T.R., near Sarnia.

24118. Aug. 24.—Authorizing C.P.R. to build road through Canmore station grounds, Alta., to cross Y to coal mine in n. e. ¼ Sec. 32-24-10, and cross its main line in s. w. ¼ Sec. 33-24-10, and to close portion of road allowance along eastern boundary of n. e. ¼ Sec. 32-24-10, w. 5 m., which lies within station grounds, except portion of road allowance within boundaries of proposed road.

24119. Aug. 20.—Approving plan, July 15, showing girder to be erected at trestle bridge over Shawinigan River, Que.

24120. Aug. 26.—Relieving speed restriction of 15 miles an hour imposed on that portion of C.P.R.'s Shebo Extension, from Leslie to Wynward, Sask., mileage 66.2 to 89.0.

24121. Aug. 26.—Authorizing Central Canada

Ry. to join Edmonton, Dunvegan and British Columbia Ry. in Tp. 77, R. 20, w. 5 m.

24122. Aug. 28.—Ordering that wages of watchmen at crossing of Winnipeg Electric Ry. and C.P.R. at Logan Ave., Winnipeg, Man., be paid by Winnipeg Electric Ry. as from Dec. 16, 1912.

24123. Aug. 28.—Authorizing Great Northern Ry. to remove regular agent at Baynes, B.C., on its Crownsnest Southern Line, caretaker to be appointed to attend to station and care for I.C.I. freight and express matter.

24121. July 31.—Extending, to Nov. 1, time within which G.T.R. shall complete highway crossing over its track in Tay Tp., Ont.

24125. Aug. 30.—Authorizing Town of Windsor, N.S., to build wooden box culvert under Dominion Atlantic Ry. where it crosses the old bed of Cunnabel Creek, culvert to have 4 by 6 ft. opening and be according to C.P.R. standard and under D.A.R. supervision.

24126 to 24130. Aug. 30, 26.—Approving Bell Telephone Co. agreements with Muskoka, Victoria and Haliburton Telephone Co., Aug. 16; Noisy River Telephone Co., Aug. 20; Mornington and Wellesley Telephone Co., Aug. 13; South Bruce Rural Telephone Co., Aug. 19; and New Dundee Rural Telephone Co., Aug. 12.

24131. Aug. 31.—Extending, for four months from date, time within which C.P.R. shall complete sidings in Bala, Ont.

24132. Aug. 28.—Approving Canadian Northern Ry. Release of Responsibility Special Contract, in connection with transportation of perishable freight in cold or stormy weather.

24133. Aug. 30.—Authorizing Kettle Valley Ry. to carry freight over its line from junction with C.P.R. near Hope, B.C., mileage 39.5 easterly to mileage 31.

24134. Sept. 2.—Authorizing C.P.R. to enter L. G. Perry's lands, s. e. ¼ Sec. 22-8-3, w. 3 m., Sask., for ploughing fireguards on each side of its right of way between mileage 15.2 and 15.6, Shaunavon Subdivision, Sask.

24135. Sept. 3.—Authorizing Canadian Northern Ry. to open for traffic its line from Laird to Carlton, 8 miles, speed of trains limited to 15 miles an hour.

24136. Sept. 1.—Authorizing Hamilton St. Ry. to operate over crossing of Toronto, Hamilton and Buffalo Ry. spur to Steel Co. of Canada's premises, Hamilton, Ont.

24137. Sept. 1.—Ordering that \$250 directed under order 24000 to be paid by York Tp., Ont., towards cost of installing bell at crossing of Eglinton Ave., be divided equally between C.P.R. and G.T.R., on account of separate bells required under amending order 24092.

24138. Sept. 1.—Extending, for 30 days from date, time for Great Northern Ry. to install bell at highway east of White Rock station, B.C.

24139. Sept. 2.—Authorizing G.T.R. to rebuild overhead farm crossing between Lots 10 and 11, Con. 1, Murray Tp., Ont.

24140. Sept. 2.—Authorizing C.P.R. to build extension of siding for McKinnon, Holmes & Co., Ascot Tp., Ont.

24141. Sept. 3.—Authorizing Canadian Northern Ry. to open for traffic its line from Tichfield to Dumblane, 8 miles; speed of trains limited to 15 miles an hour.

24142. Sept. 2.—Approving C.P.R. revised location from near Stony Creek to easterly portal of Rogers Pass Tunnel, mileage 76.44 to 80.20, Mountain Subdivision, B.C.

24143. Sept. 2.—Ordering Lake Erie and Northern Ry. to provide suitable overhead farm crossing with a 10% grade for A. and D. J. McEwen, Brantford Tp., Ont.

24144. Sept. 2.—Approving plan of C.P.R. standard pile trestle with 20 ft. clear opening.

24145. Sept. 7.—Authorizing C.P.R. to build temporary conveyor and trestle across its track at mileage 105.79, Toronto Subdivision, Ont.

24146. Sept. 7.—Authorizing Canadian Northern Ry. to open for traffic its line between Canora and Sturgis, Sask., 22 miles.

24147. Sept. 3.—Authorizing Canadian Northern Ry. and Suburban Rapid Transit Co. to operate half-interlocking plant at crossing on Portage Ave., Winnipeg, Man.

24148. Sept. 7.—Authorizing Rural Municipality Fertile Valley, no. 285, Sask., to build highway crossing over Canadian Northern Ry. Elrose Branch in n. e. ¼ Sec. 8-28-9, w. 3 m., at C.N.R. cost.

24149. Sept. 8.—Ordering G.T.R. to install, within 30 days, a derail at east end of siding at Killaloe, Ont., a light to be kept burning on derail at night to indicate its position.

24150. Sept. 8.—Ordering Toronto, Hamilton & Buffalo Ry. to re-arrange bents of timber trestle over Hamilton Radial Ry., at Sherman Inlet, Hamilton, Ont., within 60 days from date.

24151. Sept. 9.—Authorizing Canadian Northern Ry. to divert road in n. e. ¼ Sec. 9-53-16, w. 4 m.

24152. Sept. 7.—Ordering C. N. Quebec Ry. to fence west side track from mileage 23.5 to 25.2, Sarazin Siding to Deer Lake, Montfort Subdivision, and complete same by Oct. 15.

24153. Sept. 9.—Authorizing Saskatchewan

Government to build highway over Canadian Northern Ry. at south end station grounds at Richard, at C. N. R.'s cost.

24141. Sept. 7.—Approving clearances at G.T.R. siding for West, Taylor, Bickle & Co., Norwich, Ont.

24155. Sept. 8.—Authorizing C.P.R. to build extension to spur for Curtis's & Harvey Canada, Ltd., Lots 5 and 6, Rigaud Parish, Vaudreuil County, Que.

24156. Sept. 10.—Authorizing C. N. Quebec Ry. to build spur for La Compagnie des Produits Agricoles, Lac St. Jean, Que.

24157. Sept. 10.—Approving C.P.R. plans, re clearances at country elevators, in compliance with order 23935, subject to condition that side of siding farthest from elevators have clearance of at least 6 ft. from gauge side of nearest rail.

24158. Sept. 8.—Ordering Esquimalt & Nanaimo Ry., within 60 days, to install improved automatic bell at crossing Comox Road, Nanaimo, B.C.; 20% to be paid out of railway grade crossing fund.

24159. Sept. 10.—Approving proposed road diversion by G. T. Pacific Ry. in s.w. ¼ Sec. 8-21-2, w.2 m., mileage 253 west of Winnipeg, Yorkton District, Sask., subject to consent of rural municipality 183.

24160. Sept. 9.—Authorizing G.T.R. to build siding from east of Don River, Toronto, into Toronto Harbor Commissioners' premises, crossing of 150 ft. roadway to be according to standard regulations; siding to be built at expense of Toronto Harbor Commissioners, and completed within three months.

24161. Sept. 11.—Authorizing Great Northern Ry. to withdraw for present year its service on its Croville-Princeton Subdivision, B. C., required by order 23663, May 4, effective Sept. 15.

24162. Sept. 10.—Relieving Canadian Northern Ry. from providing further protection at crossing of main road between Brockville and Westport, Ont.

24163. Sept. 13.—Authorizing Great Northern Ry. to withdraw its suburban train service between Crescent and Vancouver and New Westminster, B. C., from June 15 to Oct. 15 each year, subject to condition that it stop trains 355 and 356 on flag signal at Ocean Park, Crescent, Townsend and stations between New Westminster and Vancouver.

24164. Sept. 14.—Authorizing London Railway Commission to build transfer track between London & Port Stanley Ry. and G.T.R. at St. Thomas, Ont.

24165. Sept. 13.—Authorizing C.N. Quebec Ry. to dispense with use of signal levers 1, 2, 3, 7, 11 and 12 at interlocking plant at crossing of C.P.R. east of Lorette.

24166. Sept. 13.—Relieving C.P.R. and Canadian Northern Ry. from maintaining night signalman to operate interlocking plant at Mervin Jct., Man.

24167. Sept. 13.—Relieving Canadian Northern Ry. and C.P.R. from maintaining night signalman to operate interlocking plant in lot 56, Portage la Prairie Parish, Man.

24168. Sept. 3.—Ordering G.T. Pacific Ry. to build and divert road allowance between Secs. 35 and 36-53-10, w. 5 m., across its track, crossing to be on 7% grade.

24169. Sept. 14.—Authorizing C.P.R. to build spur on s.w. ¼ Sec. 28 and n.e., n.w. and s.e. ¼ Sec. 21-14-10, e.p.m., and across allowances between Secs. 28 and 21, and Secs. 21 and 16, and across Winnipeg Electric Ry. transmission line; and rescinding order 24091, Aug. 12.

24170. Sept. 14.—Relieving G.T.R. from providing further protection at crossing at 10th line of Brooks, 5 miles west of Alvinston, Ont.

24171. Sept. 11.—Authorizing Dixville Municipality, Que., to build crossing over G.T.R., ½ mile west of Dixville station.

24172. Sept. 15.—Extending to Oct. 4, time within which Great Northern Ry. shall fence portion of right of way, mileage 187 to 188; also entire right of way, mileage 185.2 to 188.75; and 189.50 to 191.45.

24173. Sept. 15.—Relieving Canadian Northern Ry. from providing further protection at highway one mile south of Clarkleigh, Man.

24174. Sept. 11.—Extending for 60 days from date time within which clearances between G.T.R. railway and telegraph poles carrying Great North Western Telegraph Co.'s wires and railway wires between Guy St. and St. Henri station, Montreal, were authorized.

24175. Sept. 15.—Extending to Dec. 31, time within which C.P.R. shall complete extension to siding for Cataract Jct. Sand & Gravel Co., Lot 14, Con. 3, west of Hurontario St.

24176. Sept. 14.—Authorizing residents of Mont Laurier, Que., to build highway over C.P.R. at Ouellette St.; and dismissing application for crossings at Lafontaine and Des Belges St.

24177. Sept. 16.—Authorizing C.P.R. to build spur for Western Terminal Elevator Co., West Fort William, Ont., and approving clearance there.



24178. Sept. 15.—Extending to Oct. 15, time within which C.P.R. shall install bell at crossing at Ketepec station, N.B.

24179. Sept. 13.—Authorizing Canadian Northern Ry. to open for traffic its line between Inwood and Hodgson, Man., 50 miles, and rescinding order 23001, Dec. 14, 1914.

24180. Sept. 16.—Authorizing Canadian Northern Ry. to open for traffic its North Battleford Northwestern line from Edam to Turtleford, Sask., mileage 38 to 57, speed of trains limited to 18 miles an hour.

24181. Sept. 16.—Authorizing C.P.R. to cross at grade, Walnut St., Galt, Ont.

24182. Sept. 16.—Authorizing City of Merritt, B.C., to build highway crossing where Main St. crosses C.P.R.

24183. Sept. 16.—Extending for six months from date, time within which C.N. Quebec Ry. shall complete siding across Stadacona and Marlborough Sts., Montreal.

24184. Sept. 17.—Authorizing Canadian Northern Ry. to open for traffic its line from Wroxton Jct. to Yorkton, mileage 0 to 25.2.

24185. Sept. 16.—Authorizing C.P.R. to enter upon land, ¼ Sec. 31-8-4, e.p.m., Man., mileage 14, Emerson Subdivision, fireguards to be built in accordance with Fire Guard Regulations, May 3.

24186. Sept. 17.—Ordering G.T. Pacific Ry., as provided by Sec. 254 of Railway Act., to erect fence on north side right of way on Lot 35, Tp. 47, r. 13, w. 4 m., to be completed within

60 days from date.

24187. Sept. 17.—Amending order 24087, Aug. 14, re location of Toronto Terminals Co.'s railway between York St. and Don River, Toronto.

24188. Sept. 18.—Approving proposed Supplement No. 5 to Canadian Freight Classification 16, as amended, revised and resubmitted by Canadian Freight Association, Sept. 14, to become effective not later than Nov. 1, with exception of item giving specifications for cheese boxes, which is to become effective not later than Dec. 1.

24189. Sept. 17.—Ordering Halifax & Southwestern Ry. to fence right of way from Chain Lake to Bayers Lake, 1 mile, to be completed within two weeks from date.

24190. Sept. 15.—Extending to May 30, 1916, time within which Canadian Northern Ry. may carry traffic temporarily, over its Oakland Branch from mileage 42 to end of track, 12 miles, speed of trains limited to 12 miles an hour.

General order 148. Sept. 1.—Authorizing all railway companies within legislative control of Parliament of Canada and operating in Alberta and Saskatchewan, to endorse upon bills of lading, approved under order 7562, amount of advances for seed grain, fodder for animals, and other goods furnished to persons in those provinces, and interest agreed to be paid, authorized by Chap. 20 of 1915, and as provided under order in council of July 23, 1915.

## Canadian Northern Railway Construction, Betterments. Etc.

Sir William Mackenzie arrived in Ottawa, Sept. 7, after having made a trip over the Canadian Northern Ry. lines, starting at Toronto and travelling via Capreol, Port Arthur, Winnipeg, and Edmonton to Port Mann, B.C., and thence to Vancouver, and on his return going over to the eastern section of the main line between Capreol and Ottawa. The trip occupied over two weeks, and was made in a special train. During its course the newly completed lines between Ruel and Port Arthur, from near the Yellowhead Pass to Port Mann, and the Capreol-Ottawa section, were given special attention, as they are to be put into immediate operation. A freight service on the through line from Toronto to the Pacific Coast is expected to be started in October and a passenger service in November.

The line will only be operated to New Westminster for the present, but will be extended to Vancouver as soon as the terminal work at False Creek has been completed. In the meantime the Great Northern Ry. tracks will be used between New Westminster and Vancouver. In an interview at Vancouver, Aug. 28, Sir William Mackenzie is reported to have said that the company has the necessary funds, and is prepared to go ahead with the terminal project. While certain work has been in progress on the False Creek flats, which are being reclaimed for terminal purposes by the Canadian Northern as well as by the Great Northern Ry. (U. S.), there have arisen certain difficulties respecting which negotiations were in progress which were brought to a definite conclusion during the President's visit. That this is the case appears evident from statements made at a meeting of the city's Bridge and Railway Committee, Sept. 2. The chairman of the committee announced that tenders for the construction of the seawall section of the False Creek reclamation plans would be called for by the end of the month, and said the plans were in the hands of the City Engineer for approval. The cost of the work is estimated at \$115,000, and it is expected to be completed within five months. This work is in addition to that now in progress at the head of the creek. About 2,000,000 cubic yards of filling are reported to have been put in there up to Aug. 31. The erection of the station, which is to be built 250 ft. east of the east line of Main St., on the line between the Canadian Northern and the Great Northern Ry. sections of the site, is, it is said, to be completed by Mar., 1918. The total cost

of the projected terminal work at Vancouver is estimated at \$5,000,000.

Referring, in the Vancouver interview to the construction of the Vancouver Island line, Sir William Mackenzie is reported to have said the Patricia Bay line will be rushed to a completion, and that a ferry service to the mainland will be put in operation as soon as possible after the inauguration of regular traffic on the line to New Westminster. D. O. Lewis, Division Engineer, on his return to Victoria, after having met Sir William at Vancouver, is reported to have said that track laying would be started at once on the lines on Vancouver Island, and would be gone on with as far as the stock of rails available would carry it.

The Board of Railway Commissioners has authorized the opening for traffic of the following extensions of lines:—From Laird to Carleton, 8 miles, an extension of the branch from Dalmeny in the direction of Prince Albert, Sask.; from Tichfield to Dumblane, 8 miles, an extension of a branch of the line from Saskatoon to Elrose, Sask.; and from Canora to Sturgis, Sask., 22 miles, a line connecting the main line to Saskatoon with the Thunderhill branch.

On branch line work, press reports state that track laying is being gone on with on the extension of the Thunderhill Branch for

on the extension of the Camrose line southeasterly towards Battle River. It is also reported that there have been talks for building two 200 ton automatic locomotive coaling plants at Kindersley, Sask., and Big Valley, Alberta. (Sept., pg. 348.)

**Canadian Local Freight Agents' Association.**—A branch of this association for Port William and Port Arthur, Ont., was organized at a meeting held at Port William, Sept. 9, when the following officers were elected:—President, G. H. Drowley, Canadian Northern Ry., Port Arthur; Vice President, C. E. Legg, C. P. R., Port William; Secretary-Treasurer, M. Travers, C. P. R., Port William.

**Steam Railway Electrification in England.** The section of the Lancashire and Yorkshire Ry. between Manchester and Bury, which is being electrified, will, it is expected, be ready for operation during November. The third rail system has been adopted, the same as is used on the line between Liverpool and Southport, which has been in operation several years. Corridor cars will be adopted.

## Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1914-15, from July 1, 1915:

	Gross Earnings	Expenses	Net Earnings	Increase or Decrease
July	\$1,206,100	\$921,000	\$285,100	x\$145,400
Aug.	1,192,800	914,000	278,800	(x) 200
	\$2,398,900	\$1,875,000	\$523,900	\$151,300
Decr.	\$ 563,100	\$ 411,800	\$151,300	.....
	x Decrease.			

Mileage in operation at Aug. 31, 4,965, against 1,670 at same period 1914.

Approximate earnings for three weeks ended Sept. 21, \$1,182,400, against \$1,345,400 for same period 1914.

## Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1914-15, from July 1, 1915:

	Gross Earnings	Expenses	Net Earnings	Increase or Decrease
July	\$7,895,375.47	\$5,094,972.35	\$2,800,403.12	x\$978,042.71
Aug.	7,895,375.47	5,094,972.35	2,800,403.12	x\$978,042.71
Decr.	\$2,586,596.25	\$1,608,553.54	\$ 978,042.71	.....
	x Decrease.			

Approximate earnings for August, \$7,914,000, against \$9,532,000 for Aug., 1914, and for three weeks ended Sept. 21, \$6,624,000, against \$7,184,000 for same period 1914.

## Grand Trunk Railway Earnings, Etc.

The following figures show the earnings for the G.T.R. (including the Canada Atlantic Ry.), the G.T.W.R. and the D.G.H. & M.R. for August:

Grand Trunk Railway.	
Earnings .....	\$3,612,900
Expenses .....	2,507,500
Net earnings .....	\$1,105,400
Grand Trunk Western Railway.	
Earnings .....	\$635,950
Expenses .....	512,500
Net earnings .....	\$123,450
Detroit, Grand Haven and Milwaukee Ry.	
Earnings .....	\$249,100
Expenses .....	188,400
Net earnings .....	\$60,700
Approximate earnings for August, \$4,585,881, against \$4,853,740 for Aug., 1914, and for three weeks ended Sept. 21, \$3,188,108, against \$3,267,866 for same period 1914.	
TRAFFIC RECEIPTS OF THE SYSTEM.	
Aggregate from Jan. 1 to Aug. 31:—	
	1915                      1914                      Incr                      Decr.
G.T.R.....	\$25,771,392      \$28,188,120                      \$2,416,728
G.T.W.R.....	4,788,364      4,746,721      \$41,643
D.G.H.&M.R..	1,720,902      1,630,296                      90,606
Totals.....	\$32,280,658      \$38,565,137                      2,284,479

## Grand Trunk Pacific Railway Earnings.

The approximate earnings of the Prairie Section, 916 miles, for August were \$259,581, against \$363,074 for Aug., 1914. Aggregate earnings for two months ended Aug. 31, \$481,088, against \$707,061 for same period 1914.

## Songhees Indian Reserve, Victoria, B. C.—

The British Columbia Department of Public Works is laying out the portion of the Songhees Indian Reserve, Victoria, received by it on the partition with the railway companies. The plans include the building of a retaining wall along the waterfront, and the reclamation of an extensive area behind it, the construction of a public road across it extending from high level at the proposed Johnson St. terminal to a subway at the wharf level, and a railway track to be used jointly by the Esquimalt and Nanaimo Ry. (C. P. R.) and the Canadian Northern Pacific Ry. After the reserve is laid out it is proposed to complete the scheme by the erection of two freight docks, a coal dock and a ferry slip, as required by the development of the area reserved for industrial plants. H. A. Icke is resident engineer in charge of the work.



## Traffic Orders by the Board of Railway Commissioners.

### Endorsement of Bills of Lading re Advances For Seed Grain, Etc.

General order 148, Sept. 1, re the collection of advances for seed grain, fodder for animals and other goods by way of relief, furnished to persons in Alberta and Saskatchewan, under the authority of the Statutes of 1915, chap. 20, and the Board's order 7562, July 15, 1909, approving forms of bill of lading for use by railway companies, and setting forth conditions and limitations to be endorsed upon them. Upon the request of the Governor General in Council that railway companies be instructed to endorse upon the bills of lading under which shipments of grain are made in Alberta and Saskatchewan, the amount payable for advances for seed grain, fodder for animals and other goods, as authorized under said Statutes of 1915, chap. 20, and the interest agreed to be paid, and reading what has been filed on behalf of the Canadian Pacific, Canadian Northern and Grand Trunk Pacific Railway Companies: It is ordered that in pursuance of the powers conferred upon the Board under the Railway Act, sec. 340, and all other powers possessed by it in that behalf, all railway companies within the legislative control of the Parliament of Canada and operating in Alberta and Saskatchewan, are authorized to endorse upon the bills of lading, approved under order 7562, the amount of advances for seed grain, fodder for animals and other goods furnished to persons in Alberta and Saskatchewan, and the interest agreed to be paid, authorized by said chap. 20 of the Acts of 1915, and as provided under Order in Council of July 23, 1915.

### Fredericton Freight and Passenger Rates.

24001. July 27. Re application of the Board of Trade of Fredericton, N. B., for an order remedying arbitrary and discriminatory rates on both freight and passenger traffic to and from Fredericton, on the Canadian Pacific and Intercolonial Railways; and the application of the C. P. R. Co. for a rehearing of the matter: Upon hearing the application of the Board of Trade of Fredericton at St. John, N. B., May 14, 1914; and upon consideration of the general principles involved as developed at the hearing of the application of the C. P. R. Co. at Ottawa, Nov. 17, 1914, and what was alleged; and upon its appearing that the matter has been standing for submissions from the Board of Trade of Fredericton, and that none have been received: it is ordered that the application of the Board of Trade of Fredericton be refused.

### Class Rates, Winnipeg to Two Creeks.

24040. Aug. 3. Re complaint of Two Creeks Grain Growers' Association alleging unjust discrimination in freight rates as between Winnipeg and Elkhorn, and Winnipeg and Two Creeks, Man., on the C. P. R., to the prejudice of Two Creeks: It is ordered that the C. P. R. be directed forthwith to amend its distributing tariff from Winnipeg, St. Boniface, Paddington and North Transcona, so as to apply the same rates to Two Creeks, as to Elkhorn.

Commissioner McLean gave the following judgment:—Elkhorn, which is on the C. P. R. main line, 198 miles west of Winnipeg, had a 1st class rate of 54c, the other classes being appropriately scaled. Two Creeks, 194 miles west of Winnipeg, has a 1st class rate of 57c. Complaint is made of the difference as being discriminatory. On the movement west from Winnipeg to the two points in question, the mileage is common to Virden: Elkhorn is 16.8 miles west of

Virden, on the main line. Two Creeks is 13.4 miles north-westerly from Virden, on the line extending from Virden to McAuley. Both Two Creeks and Elkhorn fall within the mileage grouping from 190 to 200 miles, inclusive, of the standard freight mileage tariff, and therefore are prima facie entitled to the same rate on the mileage scale. Two Creeks was first opened to traffic in March, 1910. The history of the arrangements whereby the so-called Manitoba Scale was worked out has been set out in the judgment of the Board in the Western Rates Case. In substance, the standard mileage rate applicable in Manitoba was arrived at by deducting 15% from a hitherto existing uniform scale applicable generally in the prairie provinces. The distributing, or "town" tariff, rates were arrived at by a further deduction of 15%. The standard 1st class rate for the Two Creeks distance was 68 cents, and the "town" tariff rate was 57c. Adding to this the charge for Winnipeg cartage, viz. 3c., the 1st class rate would be 60c. This was the rate charged to and from Two Creeks. The Elkhorn 1st class rate at the same time was 57c. In May, 1912, the railway company abolished its cartage service at Winnipeg, reducing the 1st class rates by 3c in each case. This made the Elkhorn 1st class rate 54c and the Two Creeks 1st class rate 57c.

The railway company in its answer alleges that the rate to Elkhorn as established prior to Sept. 1, 1914, had been erroneous, and that it should properly have been 57c. The railway company stated, further, that as it was understood that under the Board's Order in the Western Rates Case, no rates were to be raised, the old rate of 54c from Winnipeg to Elkhorn was continued, although it was out of line. Miniota, the terminus of the branch line system from Chater, is 196.8 miles from Winnipeg and falls in the same mileage group as Elkhorn and Two Creeks. It is in the same territory as Two Creeks, being about eight miles due north of it. It has a rate of 54c which, standing by itself, might appear to be controlled by the fact that the Grand Trunk Pacific has the short distance, viz. 180 miles, the appropriate rate for which is 54c. However, the C. P. R. operated to Miniota before the Grand Trunk Pacific was in operation. The original rate to Miniota was 57c, 1st class. By deduction of the cartage charge, the present rate of 54c was arrived at. Winnipeg to Virden, 180.5 miles, falls within the group of the standard mileage, covering from 180 to 190 miles. The distributing rate appropriate to this is 54c. Harmsworth, which is 8.7 miles west of Virden, on the Virden-McAuley Branch, falls within the same group as Virden, and is given the 54c rate.

It is alleged that the difference in rate as between Elkhorn and Two Creeks does not create a discriminatory situation. It is stated that the two points have nothing in common; that the tonnage in and out of Two Creeks is insignificant; that Two Creeks is situated on a branch line, while, on the other hand, Elkhorn is on the main line, where the cost of operating is lower and the density of tonnage and population much greater. While reference has been made to the difference in the density of traffic as between the main line and the branch line, the pertinency of this is not apparent when it is considered that what is involved is a general mileage scale. As has been indicated, the 54c rate is also given to Elkhorn; but, while Virden and Harmsworth, falling within the same mileage group, are given the same rate, and while Elkhorn and

Miniota have the same rate, Elkhorn and Two Creeks, falling within the same mileage group, are given different rates, as has been indicated. This is a discriminatory treatment, which has not been justified, and Two Creeks should be given the same rate as is given to Elkhorn.

### Interchange of L. C. L. Traffic at Lyn, Ont.

24039. Aug. 3. Re complaint of J. N. Knowlton, Jr., of Newboro, Ont., that the Canadian Northern Ry. refuses to accept from the Grand Trunk Ry. at Lyn, Ont., certain goods consisting of a sewing machine and box of settlers' effects consigned to him from Black Rock, N. Y., on June 29, 1915: Upon its appearing that Lyn is shown in the Official Stations Lists of the Grand Trunk and Canadian Northern Railway Companies, C.R.C. nos. E.2368 and E.227, respectively, as a point of transfer, by track connection, for freight in less than carload lots, as well as in carloads between the said companies' railways, and that freight in less than carload lots has accumulated at Lyn because of the refusal of the Canadian Northern to receive other than carload shipments from the Grand Trunk over the said track connection; It is ordered that the Canadian Northern forthwith accept the said less-than-carload freight from the Grand Trunk over the track connection between the railways of the two companies at Lyn, and forward it to its destinations without further delay.

### Interchange Facilities at Calgary.

24079. Aug. 13. Re application of City of Calgary, Alta., for the construction of interchange tracks between the Grand Trunk Pacific and Canadian Pacific Railways there: Upon hearing the application at Calgary on Nov. 26, 1914, and a subsequent sitting at Calgary on June 9, 1915, and it appearing that the Department of Trade and Commerce, in order to secure access for the Grand Trunk Pacific Ry. to the elevator at Calgary of the Board of Grain Commissioners for Canada, is willing to contribute \$14,000 toward the construction of the interchange tracks—It is ordered that the Grand Trunk Pacific Ry. forthwith proceed with the construction of interchange tracks between its railway and the C. P. R., at the location known as 'the Globe Elevator site,' in accordance with plans to be submitted by the railway company to the Board for approval, upon the following conditions: The Department of Trade and Commerce will pay to the Grand Trunk Pacific Ry. \$14,000 towards the cost of the construction of the interchange tracks. The construction of the interchange tracks is to be carried on under the supervision and to the satisfaction of an engineer of the Board.

### Pulpwood Rates to Mechanicville, N. Y.

24102. Re complaint of Auger & Son and the d'Auteuil Lumber Co., of the City of Quebec, against Supplement 1 to the C. P. R. Tariff, C.R.C. no. E.2847, increasing rates on pulpwood to Mechanicville, N. Y., via Boston & Maine Rd.: It is ordered that Supplement 1 to C. P. R. Joint Freight Tariff, C.R.C. no. E.2847, and Supplement 16 to Grand Trunk Ry. Joint Freight Tariff, C.R.C. no. 2588, providing increased rates on pulpwood to Mechanicville, via Boston & Maine Railroad, be allowed: the said supplements to become effective not earlier than Nov. 1, 1915; and that order 23020, Dec. 22, 1914, suspending the said supplements, be rescinded.

### Interswitching to Cobourg Town Dock.

24104. Re application of Town of Cobourg, Ont., for an order directing the Grand Trunk Ry. to grant access to the harbor or dock located on the town esplanade, owned by the corporation, and connecting



with the G. T. R. main line: It is ordered that the G. T. R. be directed to switch cars in its service, and to interswitch cars in the service of any other railway company with whose railway it has, or may have, a connection at Cobourg, to and from the track on the esplanade alleged to be owned by the Town of Cobourg, when desired to do so by the Mayor or Clerk of the Municipality, in writing, in general terms, or in specific cases, upon condition that the G. T. R. shall not be responsible for the collection from consignees of freight charges nor for damages to cars, nor for damage to or loss of contents while on the said siding, unless caused by or resulting from the negligence of the G. T. R., its servants or agents. Order 21976, June 12, 1914, is rescinded.

#### Release Form for Carriage of Freight in Cold or Stormy Weather.

24132. Aug. 28. Re application of the Canadian Northern Ry. for approval of Release of Responsibility Special Contract in connection with transportation of perishable freight in cold or stormy weather. It is ordered that the said Special Contract be approved.

#### Supplement to Canadian Freight Classification.

24188. Re application of Canadian Freight Association, on behalf of the railway companies subject to the Board's jurisdiction under section 321 of the Railway Act, for an order approving the proposed Supplement 5 to Canadian Freight Classification 16, containing certain increased, reduced, and additional ratings: Notice of the proposed increased ratings having been given in The Canada Gazette, as required by sec. 321 of the Railway Act, and the Board having invited consideration thereof by the Canadian Manufacturers' Association, the Montreal Chamber of Commerce, the Ontario Wholesale Grocers' Guild, and the Boards of Trade of Halifax, St. John, Quebec, Montreal, Ottawa, Toronto, Hamilton, Brantford, London, Winnipeg, Brandon, Regina, Saskatoon, Calgary, Edmonton, Vancouver, and Victoria; upon the consideration of what has been filed; and upon the recommendation of the Chief Traffic Officer of the Board—It is ordered that the said proposed supplement, as amended and revised and resubmitted for approval by the Chairman of the Canadian Freight Association, by letter dated at Montreal, Sept. 14, 1915, be approved, to become effective not later than Nov. 1, 1915, with the exception of the item on page 9 giving specifications for cheese boxes, which is to become effective not later than Dec. 1, 1915.

#### Canadian Northern Standard Mileage Tariff.

24200. Sept. 20. Re application of Canadian Northern Ry., under sec. 327 of the Railway Act, for approval of its Standard Freight Mileage Tariff C.R.C. no. W-862, cancelling C.R.C. no. W-793. It is ordered that the said tariff be approved.

**Fish Traffic in Western Canada.**—Since the opening of the Grand Trunk Pacific Ry. to Prince Rupert, B. C., there has been a large development in the fishing industry at that point, and considerable shipments are being made to Chicago and the middle west. By the opening of the Edmonton, Dunvegan and British Columbia Ry. northward from the G. T. P. R. main line, the fishing in Lesser Slave Lake has been made accessible. Two companies have been formed to deal with the business, and the Canadian Express Co. has been called on to supply special refrigerator cars to carry fish to Edmonton and thence to Winnipeg by G. T. P. R., and on by connecting lines to Chicago.

#### Railway, Finance Meetings, Etc.

**Algoma Central and Hudson Bay Ry.** The bondholders' committee has issued a circular stating, as a result of its recent enquiries, that while it is unable to recommend that any action be taken at present against the Lake Superior Corporation, it feels bound to criticise the financial arrangements which were made, under which the Corporation guaranteed the bonds of the railway company, the terminal company and the Algoma Steel Corporation, and other concerns. The guarantee was entirely dependent for any value upon the success of the various subsidiaries whose bonds were guaranteed. Some important negotiations are pending, and as the committee desires to strengthen its hands, it has requested bondholders to deposit their bonds with the Bank of Montreal.

**Klondike Mines Ry.** Following are the officers and directors for the current year, elected at the recent annual meeting,—President, H. B. McGiverin; Vice President, J. P. Ebbs; Secretary, A. Haydon; other directors,—John Latta and C. G. Kekewich.

**White Pass and Yukon Route.** Gross earnings from Jan. 1 to July 31, \$739,582 against \$804,498 for same period 1914.

**Lachine, Jacques Cartier and Maisonneuve Ry.**—The annual meeting was held at Montreal, Sept. 7. Following are the directors for the current year:—President, E. J. Chamberlin; Vice President, R. S. Logan; Secretary-Treasurer, Frank Scott; other directors, H. G. Kelley, J. E. Dalrymple, W. H. Biggar, K. C., and Hugh Paton.

**Shuswap and Okanagan Ry.**—Canadian Pacific Ry.—Application is being made to

the Board of Railway Commissioners for a recommendation to the Governor General in Council to sanction the leasing of the Shuswap and Okanagan Ry. to the C. P. R. for 999 years from July 1, 1913. The S. and O. R. extends from Sicamous Jct., on the C. P. R., to Okanagan Landing, on Okanagan Lake, B. C., 50.8 miles. The line was built under a British Columbia charter granted in 1886, and was finally opened for traffic in 1893 by the C. P. R., under a lease for 25 years. The British Columbia Legislature authorized the issue of \$1,249,760 of 4% bonds upon which there was a provincial guarantee of interest for 25 years from 1890, receiving in return 40% of the gross receipts.

**Thousand Islands Ry.**—The Annual meeting was held at Deseronto, Ont., Sept. 13. Following are the directors for the current year: President, E. W. Rathbun, Deseronto, Ont.; Secretary-Treasurer, J. H. Valteau, Gananoque, Ont.; Manager, H. W. Cooper, Gananoque, Ont.; other directors, C. S. Lee and B. R. Hepburn.

**Toronto Terminal Ry. Co.**—The annual meeting was held at Montreal, Sept. 14. The officers and directors for the current year are,—President, H. G. Kelley; Vice President, George Bury; other directors, Sir Thomas G. Shaughnessy, E. J. Chamberlin, I. G. Ogden, J. E. Dalrymple; Secretary, H. Phillips; Treasurer, H. E. Suckling; General Manager, J. W. Leonard; Auditor, W. H. Ardley; General Solicitor, W. C. Chisholm; Chief Engineer, J. R. W. Ambrose.

**Franklin Railway Supply Co.,** New York, has opened an office in the Transportation Building, Montreal, in charge of J. S. Coffin, Jr., as Canadian Sales Manager.

#### Grain in Store at Terminal Elevators, Interior Terminal Elevators and at Public Elevators in the East.

Week ending Sept. 10, 1915.	Wheat, bushels.	Oats, bushels.	Barley, bushels.	Flax, bushels.	Totals, bushels.
<b>Fort William:—</b>					
C.P.R. ....	215,495	8,564	20,501	2,589	247,149
Consolidated Elevator Co. ....	76,312	10,561	10,533	70,519	167,945
Empire Elevator Co. ....	233,390	13,195	24,676	119,941	391,202
Ogilvie Flour Mills Co. ....	199,917	11,870	7,824	...	219,611
Western Terminal Elevator Co. ....	46,885	...	...	223,179	270,064
G.T. Pacific ....	66,706	2,187	5,858	102,271	177,032
Grain Growers' Grain Co. ....	187,955	11,193	14,313	...	213,461
Fort William Elevator Co. ....	36,614	11,832	3,032	142,122	193,666
Eastern Terminal Elevator Co. ....	13,672	2,092	10,999	...	26,763
<b>Port Arthur:—</b>					
Port Arthur Elevator Co. ....	738,649	20,714	102,254	244,125	1,103,042
D. Horn & Co. ....	2,074	...	...	38,122	40,196
Dominion Government Elevator ..	117,850	14,961	9,001	73,696	215,511
Grain afloat ....	...	...	...	...	...
<b>Total Terminal Elevators ....</b>	<b>1,935,519</b>	<b>107,172</b>	<b>209,081</b>	<b>1,013,864</b>	<b>3,265,636</b>
<b>Saskatoon Dominion Government Elevator ....</b>	<b>...</b>	<b>...</b>	<b>...</b>	<b>...</b>	<b>...</b>
<b>Moosejaw Dominion Government Elevator ....</b>	<b>18,791</b>	<b>133</b>	<b>311</b>	<b>612</b>	<b>19,847</b>
<b>Total Interior Terminal Elevators ....</b>	<b>18,791</b>	<b>133</b>	<b>311</b>	<b>612</b>	<b>19,847</b>
<b>Depot Harbor ....</b>	<b>...</b>	<b>42,250</b>	<b>...</b>	<b>...</b>	<b>42,250</b>
<b>Midland:—</b>					
Aberdeen Elevator Co. ....	...	1,659	...	...	1,659
Midland Elevator Co. ....	...	...	...	...	...
Tiffin, G.T.P. ....	...	...	...	...	...
Port McNicol ....	21,842	102,335	14,166	...	138,343
Collingwood ....	41	...	...	194	235
Goderich ....	6,907	...	...	...	6,907
<b>Kingston:—</b>					
Montreal Transportation Co. ....	...	...	...	...	...
Commercial Elevator Co. ....	...	27,010	...	...	27,010
Port Colborne ....	13,616	24,957	...	8,920	47,493
Prescott ....	...	...	...	...	...
<b>Montreal:—</b>					
Harbor Commissioners No. 1 ...	...	9,031	...	...	9,031
Harbor Commissioners No. 2 ...	901,238	150,938	2,437	24,993	1,079,606
Montreal Warehousing Co. ....	1,155	22,860	...	10,578	24,593
Quebec Harbor Commissioners ...	3,509	9,885	...	...	13,394
West St. John, N.B. ....	...	...	...	...	...
Halifax, N.S. ....	...	...	...	...	...
<b>Total Public Elevators ....</b>	<b>918,308</b>	<b>381,891</b>	<b>25,634</b>	<b>74,491</b>	<b>1,400,324</b>
<b>Total quantity in store ....</b>	<b>2,902,618</b>	<b>489,199</b>	<b>235,039</b>	<b>1,088,967</b>	<b>4,715,823</b>
<b>*Corn.</b>					



### Railway Rolling Stock Notes.

The Canadian Northern Ry. has received 10 steel frame baggage cars from National Steel Car Co.

The Intercolonial Ry. has received 300 of the 650 box cars, which were ordered recently from Canadian Car and Foundry Co.

Canadian Locomotive Co., Ltd., Kingston, is building 16 Canadian Baldwin electric trucks for the Lake Erie and Western Ry. for standard gauge suburban electric cars.

### Steel Frame Box Cars for Canadian Government Railways.

The 350 forty ton box cars which are being built for Canadian Government Railways by the National Steel Car Co., Hamilton, Ont., are of steel frame type from drawings submitted by the Superintendent Rolling Stock, G. R. Joughins. Following are the general dimensions:

Height from rail to top of brake mast	13 ft. 10 ins.
Height from rail to top of eaves	12 ft. 7 1/4 ins.
Width over eaves	9 ft. 3 1/2 ins.
Length inside	36 ft. 0 ins.
Width inside	8 ft. 6 1/2 ins.
Distance between pulling face of couplers	39 ft. 11 1/4 ins.

To resist the shocks and injury to end sheathing, 2 3/4 in. oak blocking extending 3 ft. from floor is bolted through end sheathing to centre and corner posts. Over the side door track is placed a hood 11 1/2 ft. long, no. 14 gauge, thus ensuring weather proof conditions and the easier working of door. To further assist in making the car weatherproof, the side plate filler on Z-bar side plate besides fitting snugly between T carline has a continuous bearing surface between end of carline connection and edge of Z bar side plate. Side doors are 5 ft. 4 ins. long. At one end of car 16 1/2 ins. from floor is a 10 x 10 in. rail door opening with a steel sliding door inside of car. A cast steel pocket is placed in the rail door opening and bolted to car. On same end of car a grain door opening 14 x 24 and 19 1/2 in. from bottom of end plate is covered on outside of car by a steel sliding door and on inside of car by a swinging door of pressed steel. The roof is the all metal inside type resting on T shape carlines. Ladder rounds are riveted to stiles which can easily be detached from car in case of repairs. The pressed shape running board splice is designed by the builders. Couplers are the top operating type operated by uncoupling device.

The centre sills consist of two 15 in. 23-lb. channels spaced 12 3/4 in. back to back with a 19 1/2 in. cover plate at bolster. At ends of centre sill is riveted a pressed shape sub draft sill designed to take twin spring draft gears, and stiffened with a 3 x 3 in. angle between sub draft sill and centre sill. The side sills are 8 in. 11.25 lb. channels connected to end sills by gussets. The end sills consist of 10 in. 15 lb. channels with a 12 in. cover plate which is riveted to centre and side sills. Between bolster and end sill is a 5 x 3 1/2 x 3/8 in. diagonal brace riveted to pressed shaped gussets. The bolster and cross bearer diaphragms are pressed shapes and the bridging of 4 in. 8.2 lb. Z-bars. Between the centre and side sills is a 3 in. 6.7 lb. Z-bar, the length of car, to which the floor is bolted. Nuts are secured by nut locks. The side framing consists of 3 in. Z-bars riveted directly to side sill and to side plate by means of pressed shaped connections. The side plate is a 4 1-16 in. 10.3 lb. Z-bar

and the end plate of a pressed Z-shape plate. The end framing consists of two 4 in. 8.2 lb. Z-bars and two intermediate posts of 3 in. 6.7 lb. Z-bars. The end framing together with the end blocking ensures a thoroughly strong end and is capable of resisting the shocks and injuries due to movements of material in the car.

Westinghouse air brakes are used complete with centrifugal dirt collector, and J. M. piston expander rings. The trucks are of the arch bar type with bolsters fitted with roller attachments and side bearings, and cast steel centre plate. Trucks are equipped with the McCord malleable iron journal boxes with improved McCord lid. The brake beam is hung from brackets cast integral with cast steel columns. The malleable brake heads are fitted with safety keys. Brake shoes are steel back.

### The Obsolete Gross Ton.

E. J. McVeigh, General Storekeeper, Grand Trunk Ry., writes Canadian Railway and Marine World: "When is a ton not a ton? Answer—When it is a gross ton. But why a gross ton? Who, away back in the dark ages started the thing anyway? And why in the name of common sense, meaning something very uncommon, should we as, presumably intelligent people continue to use it? Is it convenient? No. Does it get us anything beyond confusion and trouble? No. Then why, and again why? If we would only stop to think for a moment, which few of us do, would we go on following a useless, and worse than useless custom or habit? Try the thing yourself. Figure out 987,468 lbs. at \$14.60 a gross ton. Then figure it at the net ton. And then think of all the poor clerks in Canada and the United States, who are using the gross tons, and making mistakes. Then ask yourself, why the gross ton? Surely it is a dead one, long dead, so pitch in and help to bury it."

### Miscellaneous Electric Railway Matters.

**Running Board on the Toronto Ry. Cars.** The charge against the Toronto Ry. Co. for criminal negligence in operating cars with an outside running board, was heard at the Toronto Police Court, Sept. 2, when formal evidence only was taken and the case sent for trial to a higher court.

**The Sandwich, Windsor & Amherstburg Ry.,** is running a special night service to and from the Michigan Central Rd. station at Windsor, Ont. A car leaves Ouellette Ave. and Sandwich St. at 12 midnight to connect with C. P. R. train 19. A car leaves the same point at 1.30 a. m. to connect with C. P. R. train 20 and to return to starting point if there are passengers on that train for Windsor.

**Proposed Commission for Three Border Towns.**—A Windsor, Ont., press dispatch says that at a meeting there representatives of the municipal councils of Windsor, Walkerville and Sandwich adopted a resolution in favor of asking the Ontario Government to enact legislation for the formation of a metropolitan commission to deal with all street railway questions and to take charge of the waterworks, sewers and Hydro-electric system of each of the border municipalities.

**Children's Fares on Ottawa Electric Ry.**—The Ottawa Electric Ry. has notified the public that all children under 10 years of age, excepting only infants in arms, will be charged a 3c. fare. The practice has hitherto been to let children up to 5

years, in company with parents or guardians, travel free, and to charge half fare for those between 5 and 12 years. The abuse of this by parents and those in charge of children has led the company to give notice that it will charge 3c. in cash according to the published tariff for children under 10. This will not affect the school children's rate, which is 20 tickets for 50 cents, good only during school hours.

### Miscellaneous Marine Matters.

A press report from Vancouver states that an attempt is to be made shortly, to save the C.P.R. Islander, which sank in the Lynn Canal nearly 14 years ago. Previous attempts have been made in this connection, and it is said that the safe on board contains several thousand dollars worth of gold dust. A new diving apparatus is to be tried on the work. The vessel is said to be lying in 320 ft. of water, but its exact location has not been arrived at.

**The Donald Steamship Co. Ltd.** has been incorporated under the Dominion Companies Act, with \$500,000 capital and office at Montreal, to carry on business as steamship owners, agents, brokers, etc., and to own and operate steam and other vessels, wharves, docks, piers and other shipping facilities. The incorporators are, R. T. Heneker, K. C., H. N. Chauvin, G. A. Coughlin, H. Wylie and C. A. Shannon, Montreal.

**The International Mercantile Marine Co.'s** plan for reorganization has been declared operative by the reorganization committee, and in making this announcement the committee states that the continued large earnings of the properties indicate that the assured cash resources of the company made it unnecessary for the stockholders to subscribe to the bonds of the new company at \$2.50 a share. Stockholders were allowed to deposit their securities without payment of this subscription, and those who had already paid, could obtain a refund up to Oct. 1, which date was set as the limit for the deposit of stock, trust certificates and bonds under the new arrangement.

**Panama Canal Traffic.** In the first fiscal year of operation, ended June 30, but embracing only 10 1/2 months, from Aug. 14, 1914, to June 30, 1915, the canal was used by 1088 vessels, and 4,969,762 tons of cargo were moved. At this rate the movement would be 5,679,762 tons in a full calendar year, 473,313.4 tons a month or 15,530.6 tons a day. The movement was 2,125,735 tons eastbound and 2,844,057 westbound. The heaviest month was March, when 635,057 tons were moved. There were only 137 vessels moved that month, however, while in June 143 vessels carried only 603,180 tons. In May 142 vessels carried a still smaller tonnage.

**Victoria Harbor Improvement Works.**—water and piers at Ogden Point, Victoria, B.C., is proceeding rapidly. The break-work on the construction of the breakwater will extend out to sea about 1,500 feet, and from the end will project an elbow about 750 feet long. The base of this will be about 200 feet wide and 50 feet high, composed of rubble, capped with granite blocks and concrete. On the eastern side there will be a pier 1,000 feet long, and on the western side one of 800 feet, giving accommodation for 11 ocean-going vessels. The concrete cribs for the bases of the piers are being built at Esquimalt and floated to their locations and sunk into position. The contractors for the breakwater are Sir John Jackson (Canada), Ltd., and for the piers, Grant, Smith and MacDonnell, Ltd.



# Electric Railway Department

## Motorman Instruction on the Toronto and York Radial Railway.

By A. M. Smith, Master Mechanic, Toronto and York Radial Railway.

In 1902, W. H. Moore, Assistant to President, Toronto Ry., introduced an organization of roadmasters on that line who were to operate directly on the cars. The special duties of these officers was to keep in direct touch with the men on their respective runs, so as to be ready at all times to instruct them in their duties when necessary to improve the service, with the result that a more regular service was maintained, careless men disciplined, defects reported and complaints investigated. Official attention given to these matters soon showed their worth, not only in improving the men, but the officials obtained information otherwise overlooked and of value to the management.

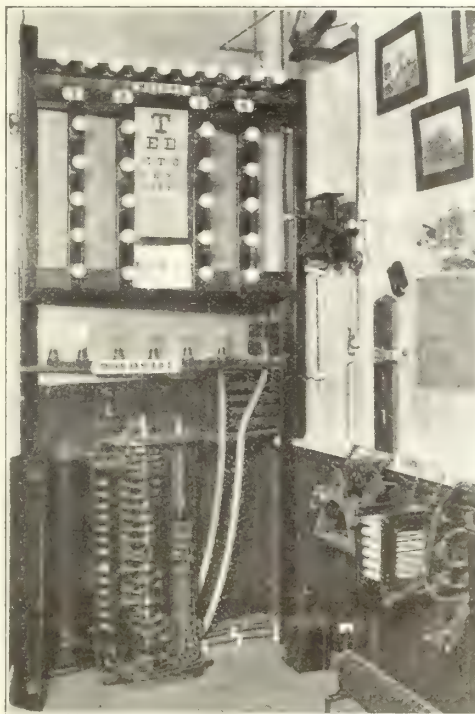
Meetings of the roadmasters were held from time to time, at which suggested improvements were open to discussion by the roadmasters, and these meetings were greatly encouraged by the presence of the superior officers when possible for them to attend, who assisted and encouraged the men, and corrected any errors that might arise. The writer had the pleasure of attending and taking an active part in these discussions, the object of which was to obtain as nearly as possible an uninterrupted service, better conditions and safe transportation, all of which naturally involved the selection of better men.

Instructions were prepared and given to the roadmasters, who in turn instructed their men, so that when a new man was trained as a motorman, he was not sent to the official responsible for final examination without first being properly prepared by the roadmaster, resulting in a considerable saving in time.

After the introduction of this system of instruction, it became apparent that something more than mere verbal instruction was necessary to properly demonstrate the practical side of their duties. Therefore, in 1903, the writer prepared a system of lamps, similar to that shown in the accompanying illustration, for this purpose, to show as nearly as possible the exact working of the electrical equipment on the car, and so arranged that breakdowns such as occur on the line could be demonstrated, and the methods of locating and repairing the trouble visualized. This arrangement shows a controller, each motor separate, rheostat, etc. The practice in using this system was to cause one roadmaster to leave the room while another disabled the equipment, the absent roadmaster on returning being instructed to locate the trouble, and when located, to make temporary repairs or cut out the defective part, and proceed. The other roadmasters took a keen interest in these tests, absorbing as much information as possible, and anxiously waiting their turn to locate and repair defects. As one roadmaster remarked after submitting to this test, "We were only drivers before, now we are motormen." When the trouble was located and a repair made, the lights would indicate whether it was performed correctly or not. These lights would show the motors cut out, effect of one motor being open, sectional and unit operation of the rheostat the lights replacing acceleration, and they would also show plainly the action of the different parts of the equipment. This left little doubt in the minds of those receiving instructions as to just

what should be done in the event of any breakdown.

All motormen on the Toronto and York Radial Ry. receive similar instruction on the equipment shown in the illustration, and my department has been greatly benefited in the saving of time and the convenience of having the men trained and capable of repairing minor defects, and bringing home the car without having to send out men from the mechanical department, perhaps miles up the line. All motormen train ten days with an instructor, after which they receive their final examination on the system. At the same time the necessity for care, responsibility and obedience is impressed on their minds. The results obtained have been very gratifying to me,



Arrangement of Lamps for Instruction Purposes, Toronto and York Radial Railway.

and I feel justified in saying that I believe Mr. Moore was in many ways amply repaid for undertaking such an organization, which at that early date was responsible for showing the necessity for safety first methods in more careful training. I have used this system for years, and still use it with very satisfactory results.

(EDITORIAL NOTE.—One of Canadian Railway and Marine World's editorial staff was present recently at the examination of a candidate for motorman, to observe the operation of the system. The candidates are first given ten days road instruction as mentioned above, by trained and older motormen, who have demonstrated their ability to impart the necessary instruction. The final examination is made by Mr. Smith personally, the equipment shown in the illustration being located in a corner of his office.

The method followed by Mr. Smith is rather unique, but the results obtained would seem to demonstrate the value of

the method followed. The examination may be said to be in two parts: first, a general talk and queries, and second, a practical test on the demonstration board. The remarks open with a few words intended to instil loyalty in the candidate. This is emphasized by a simple comparison between a jeweller selling a watch, and the motorman selling his services, the inference being that in both cases value must be given, or the motorman is not living up to his obligations. This is followed by a reading of the more salient sections of the Ontario Railway Act, in so far as they affect the prospective motorman. A general talk follows on the evils of taking chances, and the duties of the motorman at crossings, switches, etc. Special emphasis is placed on the actions of the motorman in the car, as the company is judged by the actions of its employees.

The candidate is required to give the path of the electricity through the car, which is followed by a general talk on the use and duties of equipment parts; knowledge of the circuit breaker, as a power control, an indicator of trouble, a protection from overcrowding of the motors, a cutout in case of the controller sticking, and a safeguard to the operator, are required of the candidate, and the several features are elaborated on by Mr. Smith. The action of the controller and rheostat, and a comparison of the combination with a valve are brought to the candidate's attention.

The candidate is then taken to the test board, and the action of the car under normal operating conditions shown, the lights gradually increasing in intensity, representing the increasing power to the motors as the controller is moved from the off to the on position, the row of lights representing the rheostat, also sections being cut out one by one as the controller is moved forward, this and the action of the motors in this change being shown clearly by the action of the banks of lights.

Various defects are made in the outfit, by unscrewing lamps to represent dead motors, broken rheostat grids and fouled controller sections. It shows in all cases the method of locating the difficulty on the cars and repairing or cutting out the same so as to reach home without assistance from the shops. The whole examination takes about 1½ hours.)

### Special Track Work, Etc., for Toronto Civic Railway.

The Toronto City Council has awarded contracts for the Lansdowne Ave. car line to the United States Steel Products Co. as follows:

Double track branch-off for intersection of St. Clair Ave. and Lansdowne Ave., \$2,125. Diamond for intersection of Toronto Suburban and Toronto Civic Rys., \$789. Curved rail layout for Lansdowne Ave., \$1,328. Two 100-ft. centre radius right-hand cross-overs for Lansdowne Ave., near St. Clair Ave. and for Lansdowne Ave., near C.P.R., \$1,140 each.

For the Lansdowne Ave. line extension contracts were given the same company as follows:—Tie rods, 33c. each; tie plates, 28c. each.



## Rail and Track Dispute in St. John. New Brunswick.

Up to May 22 last, when the City of St. John, N. B., wished to make any change in grade, it was in the habit of requesting the St. John Ry. to make the necessary change in grade rails, the city then putting in the concrete base and pavement under an agreement which existed with the company, whereby a stated sum was to be paid to the city monthly, in advance, relieving the company of any liability regarding the repairing of streets. On April 6 the following resolution was moved by the City Commissioner of Public Works, and passed by the Common Council:—"Whenever the rails of the Saint John Ry. Co. are renewed for any purpose, it will be necessary for the company to replace them with grooved rails, and this council now approves of grooved rails to be adopted for use on city streets."

The Company's contention was that permission having been given to lay one kind of rail, in making repairs they had a perfect right to repair with the same type of rail as removed, i.e., that if a T rail had been laid under permission of the council, repairs could be made with T rails. This was opposed by the Commissioner of Public Works, and he also ordered the company to put in a concrete foundation. The company refused to put in grooved rails at the corner of Princess and Sydney Streets and the Commissioner of Public Works removed the rails. After considerable argument before the Commissioner of Public Works, and letters to and from the Mayor, the company and the city agreed to leave the matter to a stated case to be heard before the Supreme Court.

On June 2, the Commissioner of Public Works ordered the company to tear up its tracks and concrete base at the intersection of Union and Waterloo Streets and put in grooved rails, as he was altering the grade of the street from nothing to half an inch over a distance of about 120 ft. Representatives from the railway met the Common Council on that date at 4 p.m., and were promised consideration. On June 3, at 7 a.m., the Commissioner of Public Works tore up the company's tracks at the above mentioned intersection and, before the company could procure an injunction, placed a tar macadam pavement where the rails had been. An injunction was obtained at 5 p.m. on June 3, and is still in force.

The company, immediately following the action of the Commissioner of Public Works, and on receipt of the injunction, agreed to another stated case, and judgment was given that the company's contention was correct.

Subsequent to the occurrences outlined above the differences between the city and the company reached the courts in a new form. Under a recent decision the company was directed to bring its tracks to a level with the street paving, etc., and to put a permanent foundation under them, where the city was doing repaving work. Within the last month or so some repaving work has been in progress and differences have arisen, as to what should or should not have been done. Matters reached a climax, Sept. 6, when the city employees took up a section of the company's tracks on Main St., and filled the space with concrete. Commissioner Potts stated that the company had had ample time to bring these tracks up level with the street paving, and claimed to be justified in removing them. The company secured an injunction restraining the city from any further interference with the tracks and directing the restoration of them. The work of removal was stopped, but nothing was done

in the way of restoration of the tracks removed. Proceedings were taken against the Mayor and Commissioner Potts for not having obeyed the injunction, and the first hearing was given by Justice Grimmer, Sept. 18. A number of affidavits were put before the court, and some legal arguments were put forward, before an adjournment was made until Sept. 26.

## Edmonton Radial Railway Employees' Wages.

The employees of the Edmonton, Alberta, Radial Ry., on Sept. 5, adopted by vote a new wages agreement, as from Aug. 31, which is to be renewed from year to year, either side having power to give the other 30 days notice of a desire to change any of the conditions. The schedule of wages per hour is as follows: For conductors and motormen: First six months, 26c. Second six months, 28.5c. Commencing 2nd year, 32c. Commencing 3rd year and thereafter, 34c.

Car barns department: Electricians, painters, carpenters, machinists and fitters and blacksmiths shall be paid the recognized rate of wages as adopted by the City of Edmonton under the fair wage clause as amended Mar. 2, 1915.

Barn men and car repairers: First six months, 26c. Second six months, 28.5c. Commencing the 2nd year, 32c. Commencing 3rd year and thereafter, 34c. Experienced car repairers, 36c.

Car cleaners: Head car cleaners, 32c. Other car cleaners, 28.5c. Track greasers, 30c.

## Sherbrooke Railway and Power Company's Annual Report.

Following are extracts from the report for the year ended June 30:—

"The directors feel, that while results were not as good as anticipated, the shareholders are to be congratulated that, under the circumstances, the company has been able to hold its own. As a result of the war many manufacturers curtailed their operations, thus reducing the demand for power and this naturally affected the revenue from electric light and street railway departments. To make up for this reduction in revenue, your directors decided to purchase the lighting and power business of Waterville and Compton, together with certain rights in the Coaticook River Power Co. and an undeveloped water power and were also obliged to extend several lines to secure other contracts. As a result practically the whole of the power from the present development has been sold and will substantially increase the revenue when in operation. To cover financial requirements, however, your directors being of the opinion that this is not an opportune time for the sale of long term securities, have decided to authorize the issue of \$100,000 of 7% short term notes, payable in three, four or five years, at the option of the purchaser. As these notes will be absolutely secured by double the amount of the consolidated first mortgage bonds of the company, they will no doubt be fully subscribed for. These notes will be offered in the first place to the shareholders and bondholders of the company on terms which will undoubtedly meet with their approval.

"During the year Major D. R. McCuaig, D.S.O., a director of your company, who left for the front at the beginning of the war, was seriously wounded in the battle of Langemarck and is at present in a German military camp, and has almost recovered from his wounds. This summer, Major

N. C. Pilcher, General Manager of the company, accepted a responsible appointment with the 5th Royal Mounted Rifles and has gone abroad with his company. During his absence, J. H. Trimingham, General Superintendent of the company, will administer its affairs. Your directors desire to place on record their appreciation of the valuable and faithful services rendered by the officers and employees during a very trying period."

Assets.	
Property, plant, equipment, etc.	\$2,243,933.18
Mortgage	10,000.00
Accounts current	21,902.88
Cash on hand and in bank	3,007.64
Cash with Montreal Trust Co.	1,000.00
Cash to credit of coupon account with bank	17,137.50
Office furniture and fittings	778.85
	<b>\$2,297,760.05</b>

Liabilities.	
Capital stock	\$1,090,500.00
Bonds	1,090,500.00
Mortgage on property purchased	2,050.00
Property purchased (payable in power over a term of years)	18,950.00
Loans, Quebec Bank	20,000.00
Loans, McCuaig Bros. & Co.	33,862.47
Current accounts payable	11,816.26
Accrued interest on bonds	28,900.00
At credit of profit and loss account	1,181.32
	<b>\$2,297,760.05</b>

Gross revenue from railway, power, light, real estate rentals, etc.	\$146,769.00
Expenditure: Operation, maintenance and management	90,848.23

Net revenue for 1915	\$55,920.71
Balance at credit of 1914	1,157.19
	<b>\$57,077.90</b>

Less:	
Interest on bonds	\$54,535.00
Less interest during establishment	5,000.00
	<b>\$49,535.00</b>

Head office and legal expenses	1,780.24
Interest on current liabilities	4,204.64
Bad debts written off	376.70
	<b>55,896.58</b>

Balance carried forward to credit of profit and loss	<b>\$1,181.32</b>
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## Calgary Municipal Railway Annual Report.

The report for the year ended June 30 shows that the City of Calgary, Alta., owns and operates 71.5 miles of track, computed as single track. Of this 15.5 miles is double track and 1 mile sidings and turnouts. The total cost of construction and equipment was \$2,240,227.93, or \$31,331.85 a mile. The employees number 272 and the aggregate salaries and wages paid for the year was \$277,894.17. The total number of cars operated was 99, of which 12 are without equipment, such as trailers and work cars. During the year, no passengers or employees were killed, but 5 passengers, 2 employees and 3 others were injured. Following are statistics for the year:—

Operating earnings	\$611,826.85
Operating expenses	428,797.18

Net earnings	\$183,029.67
Interest on deposits	13,660.87

Total income	\$196,690.54
Taxes	3,316.42
Rental, land and conduits	1,012.39
Interest on funded debt	106,359.48
Interest on floating debt	2,023.04
	<b>112,811.33</b>

Net income	\$ 83,879.21
Reserves and sinking fund charges	74,984.89

Surplus	\$ 8,894.32
Car earnings	\$593,437.28
Chartered cars	1,109.35
Freight	2,522.02
Sprinkling	4,961.51
	<b>\$602,030.16</b>

Advertising earnings	\$9,626.69
Post card sales	170.00
	<b>\$ 9,796.69</b>
Maintenance of way and structures	\$11,566.42
Maintenance of equipment	\$44,270.73
Transportation, hired power	\$92,816.22



Operation of cars .....	\$240,264.27
General expenses, etc. ....	\$ 39,879.21
Ratio of operating expenses to gross earnings .....	70.08%
Ratio of operating expenses and taxes to gross earnings .....	70.62%
Total car mileage .....	2,822,699
Total car hours .....	298,185
Fare passengers carried .....	14,073,273
Transfers .....	5,000,000
Average per revenue passenger .....	4.216c.
Average all passengers .....	3.058c.
Passenger earnings per car mile .....	21.328c.
Miscellaneous earnings per car mile .....	0.847c.
Total earnings per car hour .....	\$2.05
Operating expenses per car mile .....	15.191c.
Operating expenses and taxes per car mile .....	15.308c.
Operating expenses per car hour .....	\$1.43

### The Jitney Situation in Canada.

One feature of the jitney movement has brought considerable sums to the Red Cross funds in Canada. Private owners have loaned their cars for use to run from railway stations to golf grounds and summer resorts; from towns to the scene of garden parties, and in a few instances a regular service is given to make connection with electric car lines. In all these cases the total amount of the fares goes to the patriotic fund; the owners of the cars pay the bills, and some member of the car owner's family or friend runs the car. There are other so called jitney services in a considerable number of towns, competing with the railway town bus, and otherwise. Neither of these kinds of service, which are temporary, irregular and unlicensed, have any bearing on the organized and licensed jitney services in the cities.

In Toronto the jitney situation was not in any way complicated by the holding of the annual exhibition. A considerable number of the vehicles ran on routes to the exhibition and did a good business, but with the closing of the exhibition, the regular routes were resumed, and any extra vehicles that had been running dropped out. It is not definitely known how many jitneys are now actually in service, but there certainly are not so many as there were a month ago.

The Winnipeg city licensing committee took up, on Aug. 28, the question of the drawing up of a bylaw for the regulation of the traffic in that city, and met R. W. Craig, the legal representative of the Winnipeg General Jitney Despatch and other owners, to discuss its terms.

It was reported in Winnipeg, Sept. 14, that there were at that date 635 jitneys in operation in the city against over 800 about three months ago.

The Vancouver Chief of Police submitted suggestions for the amendment of the street traffic bylaw at a meeting of the City Council's Fire and Police Committee on Sept. 8. The suggested amendments are for the better protection of pedestrian traffic, which the Chief is of opinion is menaced by the changed and increased vehicle traffic since jitneys have appeared on the streets.

The Victoria, B. C., City Council failed at its August sitting to agree upon the terms of a bylaw to control jitney traffic, and decided, Sept. 4, to have the bylaw redrafted so as to give effect to some suggestions made by jitney owners.

Outside Toronto, Winnipeg and Victoria, the situation is apparently not under discussion in any way.

Statistical and other information gathered in the United States points to the conclusion that the average "jitney" driver stays in the business about 60 days, and that the highwater mark of the traffic in any city is reached in about five months. These facts seem to suggest, one United States paper points out, that the life of the movement is not going to be measured by the ultimate life of the cars put into the service, but rather by the number of the

drivers who can be induced to enter the service. It is pointed out that so long as the cars are in good condition and the cost of the upkeep at a minimum considerable apparent profits can be made, and that as soon as the overhead charges mount up the driver gets disgusted and disappears from the service, because the returns are not equal to the outgoings. This is found to be the experience even in Los Angeles, where restrictive regulations are practically nonexistent.

The City of Portland, Ore., grants licenses to operate jitneys at \$2 a month for a seven seated car and 25c. a month for every extra seat. The regulations provide among other things that the cars must operate on regular routes, and to provide for rush hour traffic must operate to the outer terminals between 6 and 8 a.m. and between 4.30 and 7.30 p.m. must operate as far as the corner terminals. The Oregon City Council proposes to charge jitneys operating from that city to Portland a prohibitory fee for a license.

### The Elimination of the Running Board From Toronto Railway Cars.

For several months the Toronto Ry. has been experimenting with various types of cars with a view to the elimination of the running board from open cars. In a report made to the city by B. J. Arnold, of Chicago, in 1912, cross seated cars were among the recommendations made. It is, however, not deemed practicable to adopt this system as, owing to the narrow devil strip in Toronto, the cars are about 12 ins. less in width than those on most of the other larger systems in Canada and the U. S. The main difficulty is in planning the seating layout of a car to meet the requirements, and three suggestions have been made. First, the cross seated centre aisle car, second, the cross over cross seated cars with half cross seats and half longitudinal seats with a zig-zag aisle, both of which were described and illustrated in Canadian Railway and Marine World for April, and third, the centre aisle car with a longitudinal seat on the inner side, and cross seats on the outer side. The first mentioned was considered impracticable on account of the narrow devil strip, and the second was considered bad practice chiefly on account of the interruption in the aisle caused by the cross over. Regarding the third suggestion, the Toronto Ry. has equipped one of its standard semi-convertible cars with cross seats on the outer side, the side which is open in the summer being closed, the only entrance being at the rear end, with exits at both front and rear. This car has been running under observation for some time, and the Ontario Railway and Municipal Board has obtained a report on it from J. C. Royce, Consulting Engineer, Toronto, and it is probable that when certain alterations are made, the design will be approved by the Board, and cars of this type gradually placed in service.

The experimental car has a longitudinal seat the full length of the car on the inner side, with accommodation for 19 persons, and 10 cross seats and two short longitudinal seats, on the outer side, with accommodation for 24 persons. The inside width of the car is 7¼ ft., divided as follows,—cross seats 33 ins., aisle 37 ins., longitudinal seat 17 ins. The total length of the car is 44 ft. 10 ins. The body is off-set on the trucks to the extent of about 2 ins. to compensate for the slightly increased width on one side, and to allow for a more perfect distribution of weight in a fully loaded car. In the report made to the Board it is suggested that the number of

cross seats be reduced to 9, thus allowing more space between the seats, and a few other alterations will probably be made in the dimensions before the plans are finally approved. The seating capacity of the proposed car is 42.

### The Electric Railway Accident at Queenston.

The charge against E. J. Dickson, Vice President and General Manager, International Ry., of criminal negligence in connection with the accident on the Niagara Falls Park and River Ry., at Queenston, Ont., July 7, when several persons were killed and a number injured, came before the local magistrate at St. Catharines, Ont., Sept. 2. After some of the evidence taken at the inquest was read, the magistrate stated, in dismissing the case, that the General Manager could not be held responsible for any negligence on the part of the crew of the car, or of the men in the car barns, as each division of the railway is operated under a separate executive head. All the evidence showed that all rules regarding safety had been complied with and the car had all the necessary equipment. The fact that there was no sand on the car, was not the fault of the General Manager. It is a set rule of the company, that sand shall be used. Regarding track construction and curves, he pointed out that plans and specifications of the road had been submitted to the Ontario Railway and Municipal Board, and no member of the Board, nor any one else had made any suggestions in regard to making any of the curves safer. The line had been operated for over 20 years without an accident, and the company was perhaps justified in thinking that an accident could not be possible at that point.

On Sept. 17, the case against S. Boyt, the motorman in charge of the car at the time of the accident, was heard before the magistrate at St. Catharines. The only witness heard was Jas. Milne, electrical and mechanical engineer in the City of Toronto service, who stated that he would have insisted on the use of sand both in descending and ascending the hill in question. He stated that he believed the cause of the accident was that some of the brake rods must have broken unknown to the motorman, as he had found one of the brake rods with a clean break in it. In such case, the use of sand would have been unavailing. In the face of this evidence, the magistrate held that it could not be contended that the accident was due to the neglect of the motorman, and the charge was dismissed.

### Regina Municipal Railway Earnings, Etc.

Operating results for July, compared with those for July, 1914, are as follows:—

	1915.	1914
Revenue .....	\$15,887.44	\$23,177.00
Operating expenses .....	15,918.87	19,821.00
Capital charges .....	9,137.53	7,476.52
Deficit .....	8,268.96	4,120.52
Expenses per car mile ...	11.12c.	16.45c.
(excluding power)		
Expenses per car mile ...	18.37c.	21.42c.
(including power)		
Power per k.w.h. ....	2.05c.	2.00c.
Platform wages per car hour .....	75.97c.	81.26c.
Expenses per cent. of earnings less capital charges .....	94.53	
Expenses per cent. of earnings with capital charges .....	152.95	

London & Port Stanley Ry. Traffic.—A London, Ont. press dispatch says that arrangements have been made between the L. & P. S. Ry. and the Wabash Rd., for an interchange of freight and passenger traffic.



# British Columbia Electric Railway Employees' Wages Arbitrated and Reduced.

A new agreement as to wages and working conditions between the British Columbia Electric Ry. and its employees which was signed Sept. 4, is to run until six months after the cessation of the present war in Europe, with a minimum period of duration of six and a maximum period of 22 months. The basis of the agreement is the majority award of the arbitration board, made Aug. 2, which was accepted in its entirety by the company, with certain modifications subsequently made as a result of mediation of H. H. Stevens, M. P., and Dominion Fair Wage Officer McNiven.

The arbitration court consisted of Mr. Justice McDonald, chairman, appointed by the Dominion Government; A. C. McCandless, representing the company, and J. H. McVety representing the men. The board began its sittings July 19, and continued them from time to time until Aug. 13, the case for the company being put forward by W. G. Murrin, General Superintendent, and W. Saville, Chief Clerk, the men's case being presented by F. A. Hoover and W. Gates. The company desired to put in force a new schedule of wages making a reduction of 15% from that previously in force, upon the following grounds:—1. General business depression existing throughout the company's territory, which had led to an almost universal reduction of wages; 2. That the financial position of the company, owing to decreased business, made it unable to continue the old wage rate; 3. That if the rate of wages was determined by the cost of living, such cost had decreased since the last wage agreement was signed in 1913; 4. That the wages paid by the company were, in general, higher than those paid by other street railways; 5. That the wages paid had advanced 8% since 1913, because of the sliding scale, this increase coming in the face of decreased business; and in a general way the company argued that the rate of wages should depend upon the supply of and the demand for labor. The men submitted that there should not be any reduction, claiming that the wage scale which had prevailed could not be designated a living wage; that through the time of prosperity the wages should have been higher, and that the cost of living had increased since 1913.

The majority report, signed by the chairman and A. C. McCandless, goes fully into the questions coming before the board, and the evidence given upon them, and concludes as follows:—"The majority of the board feel satisfied that for the reasons stated we are warranted in recommending the adoption by the parties interested, of the agreement enclosed herewith containing reductions as shown by the wage schedule. After due consideration we trust that it will be deemed satisfactory to both sides. In the working conditions, the seniority clause remains intact. This protection, when coupled with efficiency, creates permanency of employment, more especially to those who, by length of service, have secured to themselves an advantageous position under this privilege. It appeared to us of even greater benefit at this time, when so many men are waiting to fill any vacancies that might exist in the service of the company. In fixing a rate of wages, we have not attempted to capitalize in dollars and cents the concessions above referred to, but have not overlooked their consideration. They have in the past, and doubtless will in the future weigh considerably with the employees, especially those having families dependent upon them. We have also, in making our recommendations,

borne in mind the permanency of employment that will be guaranteed to the employees by the execution of an agreement covering a definite period. In fixing the time during which we recommend the agreement to exist, we thought it well that it should expire within the same period of time as the current agreement. Various changes in the working conditions of the existing agreement were advocated by both sides. The 'seniority clause' was vigorously attacked by the company, and it was strongly contended that its operation interfered with the proper carrying on of the work, especially in the shop and barn department. This point was fully considered before the last board, and we see no reason to interfere with the decision then arrived at. The company then, as now, submitted that the practice infringed upon the principle of control that should be usually exercised, untrammelled, by the employer. What the company doubtless desired, was good results from the workmen. For that purpose, in order to safeguard the company, a clause was inserted and still remains, providing that the company has the absolute right of dismissal in case of inefficiency. The other matters in the working conditions considered were not of vital importance. We suggest some changes, but in the main we deem it advisable not to interfere to any extent with the arrangements that had already been in force between the parties for a lengthy period with little apparent friction. The Board unanimously recommends the adoption of the working conditions as changed."

The following is the wage schedule attached:—City and interurban lines, motormen and conductors shall receive per hour:

First year .....	26c
Second year .....	27½c
Third year .....	29c
Fourth year .....	30½c
After fourth year .....	32c

Motormen and conductors in work train service shall receive 1½c an hour in addition to the above rates.

[Editor's note: The previous wage scale for motormen and conductors on city lines was, per hour:

First year .....	27c
Second year .....	29c
Third year .....	31c
Fourth year .....	33c
After fourth year .....	35c

The reduction noted by a comparison of the old and new scale in this field of work runs, in general, throughout the entire revised scale.]

On interurban lines, being District 1, New Westminster, (Central Park) line, District 4, New Westminster (Burnaby Lake) line, and also on Saanich line per hour:

First year .....	27½c
Second year .....	29c
Third year .....	30½c
Fourth year .....	32c
After fourth year .....	33½c

Brake men, trolley men and baggagemen on these lines shall receive per hour:

For the first six months .....	25c
For the second six months .....	26c
For the second year .....	26½c
For the third year .....	27½c
For the fourth year and after .....	28½c

Shop and barn wages:

Car cleaners .....	25c
Motor car repairers, armature winders, helpers, blacksmith helpers, carpenters helpers, machinists' helpers and sawyers, per hour:	
First year .....	26c
Second year .....	27½c
Third year .....	29c
Fourth year .....	30½c
After fourth year .....	32c
Freight car repairers .....	28c

Freight car repairers' helpers .....	25c
Freight car inspectors .....	30c
Painters .....	39c
Freight car and rough painters .....	29½c
Brush hands .....	26c
Carpenters .....	39c
Freight car carpenters .....	33c
Machinists .....	42½c
Babbiter .....	33½c
Trolley retriever repairer .....	35c
Blacksmiths .....	42½c
Car wire men .....	38c
Air brake fitters .....	38c
Armature winders, 1st class .....	42c
Armature winders, 2nd class .....	40c
Armature winders, 3rd class .....	38c

Leading hands, while so acting, to receive beyond regular pay, 3c extra per hour.

Apprentices:

First year .....	15c
Second year .....	18c
Third year .....	22c
Fourth year .....	27c

Freight shed department:

Checkers .....	28c
Truckers .....	26c

Maintenance of way men:

First nine months .....	24c
After nine months .....	25c
Track greasers .....	25c

Blacksmiths, same rate as shop blacksmiths.

Motormen:

First year .....	28½c
Second year .....	30c
Third year and after .....	31½c

Employees paid monthly, per month:

House light troublemen .....	\$87.50
Assistant house light troublemen .....	60.00
Baggage room men (Vancouver) .....	78.00
do., (New Westminster) .....	65.00
Teamsters .....	62.50
Interlocking tower men .....	60.00

The men's representative, J. H. McVety, submitted a minority report in which he gives reasons for dissenting from the majority report; and states why, in his opinion, the company's contentions should not be accepted, and concludes by recommending the continuance of the old agreement.

Between Aug. 26 and 29, meetings of the employees' unions in Vancouver, New Westminster and Victoria were held, at which the award was discussed and a ballot was taken Aug. 30, at which a large majority of the men voted against the acceptance of the majority report. On the following day a committee representing the men, waited on George Kidd, General Manager, and asked whether the company would put forward any concessions, so that they might be considered when the report on the ballot was made to the men. Mr. Kidd stated that the company had decided to accept the majority report in its entirety, and would not consider any concessions. Communications were then opened by the men with the officers of the International organization at Detroit, and it is said that they refused to lend the necessary endorsement and financial aid, without which a strike could not be declared and carried on.

On Aug. 31, the company's General Manager sent a letter to each employee, in which he said: "The award of the majority of the board is anything but satisfactory to the company, as we contended, and still contend, that we are entitled to a reduction of 15% on our total wage bill, and also to considerable relief from the onerous working conditions contained in the agreement which has now expired. Instead of obtaining the relief for which the company asked a reduction of about 8% on its total wage bill has been recommended, and the working conditions are practically unaltered. Under these circumstances the company would be justified in refusing to accept the award. Bearing in mind, however, the conditions prevailing in the province, and fully realizing the necessity of avoiding any trouble



which might still further prejudice the business interests and general welfare of the community, the company has decided to accept the recommendations of the majority of the board. The board recommended that the new wages schedule and working conditions should take effect on Sept. 1. Realizing, however, that the company has only today notified your committee of its intention to accept the award, it has been decided to continue the existing wages schedule and working conditions for one week. Should you finally decide not to accept service on the terms laid down by the majority of the board, which will, therefore, come into effect on Sept. 8, your decision will be received by the company with great regret, as we much prefer employees who have been for many years upon our pay rolls to continue the operation of our system. At the same time your decision will not in any way affect the company's intention of adhering literally to the terms of the recommendation signed by the majority of the board.

"In the event of your refusing to continue the performance of your duties, the following course will be pursued by the company: Forty-eight hours will be given you in which to reconsider your decision. If during this time you should present yourself for duty, your services will be accepted at the rate and under the conditions laid down by the board of conciliation, but should you not during this time be willing to accept service, your name will be erased from the company's books. In the event of your deciding to leave our employ, you will be instructed to hand in, within 48 hours referred to, your badge, pass, punch, change-fund and any equipment which may be the property of the company. All seniority rights will expire within 48 hours of your failure to appear for duty, and any man afterwards engaged to carry on the company's service will have a seniority standing dating from the acceptance of his application. All men so engaged will be treated as first-year men and paid accordingly. The company has arranged, as far as possible, to pay to all employees who present themselves within the 48 hours, for the purpose of returning their equipment, all moneys which may be due to them.

"I place these matters before you clearly so that you may, before taking any steps which you may afterwards regret, have no excuse for saying that you did not understand the true facts of the case, or the true intention of the company concerning this matter, and although, as I have said, the company much prefers, for the sake of peace, to operate under the award with its old employees, yet it cannot and will not under any circumstances deviate from the conditions herein described to you."

The men met at their several centres at midnight, Sept. 1, at which the employees' committee presented a report, which it is said stated that the international executive refused to endorse a strike, mainly on account of adverse industrial conditions prevailing in Western Canada, due to trade depression and the effect of the war; and that while the executive sympathized with the men, they could only advise that the majority award be accepted under protest. The committee further reported that during the day the company had consented to certain amendments being made in the majority award. These consisted in making the agreement to run for a minimum period of 12 months and a maximum period of 22 months; and providing that employees should become and remain members of the union. The fact, however, that an employee ceases to be a member of the union does not, the understanding is, entitle its executive to demand

that he be dismissed from the service. In such cases the General Manager shall give a decision on the point, and if this is not considered satisfactory the matter shall be settled by arbitration. The meeting adjourned without ordering a strike, and on Sept. 3, a ballot was taken, when the majority report as amended was adopted, and the agreement was signed Sept. 1.

### Calgary Municipal Railway Results.

In the annual report of the City of Calgary, Alta., for 1914, the Commissioners state that the street railway department has suffered more from financial conditions than any other of the city's departments, the earnings having decreased considerably as compared with former years. The operating and overhead charges were reduced to a minimum, with the result that passengers are being carried at as low a rate, or lower than in any other Canadian city, length of haul being considered. The auditors report that the Superintendent of the railway, T. H. McCauley, had long urged that the depreciation charged against the railway was excessive, and after a consultation and examination, a few unimportant adjustments were made in the rates, some being made fractionally lower and some fractionally higher. The rate which had been fixed for track and road way at  $7\frac{1}{2}\%$ , was reduced to  $5\%$ , but only temporarily, in view of the greatly diminished traffic and resulting wear and tear, but it was stipulated that as soon as the traffic increases, the rate is to revert to the old figure. The rate fixed for depreciation on the power plant machinery was also reduced from  $7\frac{1}{2}\%$  to  $6\%$ , as it is not being used to its full capacity, and the same stipulation was made in this case. The reduction in the depreciation rate on track and roadway resulted in a saving of approximately \$27,000, and on the power plant machinery, of over \$11,000, while reducing the cost of the current to the railway permitted a refund to the railway on the cost of its power, of \$9,383.26.

The balance sheet of the street railway department for the year shows total assets of \$2,404,281.26, with liabilities of \$2,325,429.12, the net revenue account showing a credit balance of \$78,852.14.

### Quebec Railway, Light, Heat and Power Company's Annual Meeting.

The annual meeting was held at Montreal, Sept. 14, when the report for the year ended June 30, showed a total revenue of \$1,784,074, an increase of \$17,076; operating and maintenance expenses \$465,817, an increase of \$11,715; fixed charges and taxes \$735,482, leaving a net surplus of \$114,775, which added to the surplus brought forward from the previous year, makes a total available surplus of \$347,444.45.

The President, Sir Rodolphe Forget, stated that an announcement would be made shortly thereafter regarding the sale of a section of the Quebec and Saguenay Ry., which has been a heavy loss to the company.

The retiring directors were re-elected and five new ones were added, as follows:—President, Sir Rodolphe Forget; Vice President, L. C. Webster; other directors, D. O. Lesperance, J. N. Greenshields, Hon. Robert Mackay, P. Galibert, L. J. Tarte, A. Berthiaume, A. Terement, T. Bastien and L. Morin.

### Answers to Questions on Electric Railway Topics.

Following are questions submitted to the American Electric Railway Association's question box, with replies thereto by W. F. Graves, Chief Engineer, Montreal Tramways Co.:—

Will any member company having a large number of plans to care for, both of its own and of foreign make, which has perfected a system of filing and indexing the same, briefly describe the system and method of keeping it up?

In our system of filing drawings, the foreign prints are kept separate from our own drawings, the foreign prints having a consecutive number given to them and catalogued under the title of the drawing by means of a card system. Our own drawings are divided into different classes, such as Intersections, Right of Way, Cars, etc., and each class is given a distinguishing letter A, B, C, etc., corresponding to the drawer letter; drawers A, B, C, etc., are then divided into different sizes, and the record of these drawings is kept in a loose leaf book, numbered consecutively under the class heading, and also in a card index under the title of the drawing, thus—Intersection—St. James & McGill would be numbered 160 N. F., which would indicate that it was in drawer N and the size of the drawing was 17 x 33 ins., while drawing of Track Bolts numbered 160 L. D. would indicate that it was in drawer L and the size of the drawing was  $8\frac{1}{2}$  x 11 ins.

Standard Drawing	Reduced Drawing
$8\frac{1}{2}$ x 11 ins. = D	11 ins. Wide = J
11 x 17 ins. = C	17 ins. Wide = K
17 x 22 ins. = B	22 ins. Wide = L
22 x 34 ins. = A	33 ins. Wide = M
17 x 33 ins. = F	44 ins. Wide = N

To what extent is salt used in connection with keeping the track clear during snow storms or immediately afterwards? Is its use confined mostly to special work, or is it used upon the straight track?

Our average snow fall during the winter is 120 ins., resulting in the use of large quantities of salt, principally around switches and curves. During severe snow and freezing weather, we use salt at the approaches to intersections, also use salt and sand mixed, applied by hand, on important hills, of which we have a number on this property. In a milder climate, I have used salt brine, ranging from a saturate solution up, according to the temperature, and applied from barrels at the special work.

Does it pay to inspect manufacturers' special work?

My opinion is that it is essential that special work be inspected at the manufacturers. The amount of money involved in making such an inspection is small compared with the expense of the layout.

What is the best foundation for special work, crushed stone or concrete?

Crushed stone, owing to its resiliency, facilities for drainage, ease of resurfacing and repairing, is the best foundation for special work.

Does the track well ballasted with crushed stone require a longitudinal drain pipe?

In an impermeable clay soil, a farm tile drain should be installed, either in the centre between tracks or in the track space and the excavation sloped toward such drain, which should be connected with the sewer at some place, whether the track foundation be concrete or stone.

In large construction work, is it more economical to contract car house wiring or should the railway company do the work?

In my opinion, the railway company should do its own wiring in and about car houses.



This may not, in instances, be the most economical procedure, but my experience is that it is the most satisfactory in the end.

In cases where trolley troughing is used on steel girders, and hangers are rigidly fastened to the troughing, what satis-

factory methods have been employed to deaden the noise?

The placing of stripped felt about ¼ in. thick, or of asbestos fibre, between the trolley board and the structure, tends to deaden the noise of passing cars.

## Electric Railway Projects, Construction, Betterments, Etc.

**Brandon Municipal Ry.**—A press report states that the Percy St. extension was placed in operation Sept. 1, and that material is on hand for a further extension along College Ave. and 18th St. (Aug., pg. 318.)

**British Columbia Electric Ry.**—The New Westminster City Council passed a resolution, Sept. 1, calling on the company to carry on permanent work on a number of streets in the city. (Aug., pg. 318.)

**Edmonton Radial Ry.**—An arrangement is reported to have been concluded between the Edmonton, Alberta, City Council, and the Interurban Ry. for the operation by the Edmonton Radial Ry. of the Interurban Ry. line from the city limits to West Edmonton or, as it is sometimes called, Calder. The Interurban Ry. extends from the city limits to St. Albert, and has not been operated since its gasoline car was burned. The West Edmonton residents desired to have a service and the present arrangement is said to be for the electrifying of the line to that suburb, the material for which the city has on hand in its railway stores, and the operation of the piece of line as a part of the city lines. No rental is to be paid for the use of the line until operating expenses are met, after which the surplus is to be paid to the Interurban Ry. until 8% on the ascertained cost of construction has been paid, and all subsequent earnings are to go to the Edmonton Radial Ry. The agreement will run for five years. (Sept., pg. 359.)

**Hydro Electric Power Commission of Ontario.**—The Ontario Municipal Association at its annual meeting in Toronto, Sept. 2, listened to an address by Chief Engineer Gaby, of the Commission, upon the construction of electric railways by municipalities under the Commission's general control. He stated that within a few weeks reports would be ready for presentation to the various municipalities interested, showing the estimated cost of a network of electric railways throughout the western portion of the Province. The engineers' reports upon which the general report was based, had been received, covering about 300 municipalities and representing about 1,600 miles of line, in the districts from Whitby in the east to Sarnia in the west, including the county of Huron, and the arm from the Niagara Peninsula northerly to Georgian Bay. The reports would show the estimated cost of construction for the highest standard of road and equipment, and the general statistical tables would show the estimated traffic.

A committee of the Windsor, Ont., City Council, acting in conjunction with the Hydro Electric Power Commission of Ontario, is considering the electric railway situation in the city and vicinity, and it was reported, Sept. 9, that the question of the purchase of the Sandwich, Windsor and Amherstburg Ry. by the city and the other municipalities interested would be considered. (Sept., pg. 359.)

**Lethbridge Municipal Ry.**—The Lethbridge, Alberta, City Commissioners have decided to lay over for the present the proposal to extend the municipal railway to Hardieville. The proposed extension would be two miles long, and it was suggested that some of the second track in the city might be taken up and laid to Hardieville.

**Moncton Tramways, Electricity and Gas Co.**—We are officially advised that the company is laying a double track line through the new subway on Main St., under the Intercolonial Ry., 300 ft. The special work for this double track has been ordered from Canadian Steel Foundries Ltd. (July, pg. 277.)

**Montreal Tramways Co.**—We are officially advised that the company has laid two miles of new track, and has reconstructed about 15 miles of single track on various streets. It is contemplating the reconstruction of an additional three miles on various streets. It has placed an order in the U. S. for 1,500 tons of 115-462 girder rail.

The City Engineer of Montreal is reported to have said, Sept. 10, that there were a number of streets in the city upon which repairs to the roadbed were urgently needed, but to which nothing could be done because the M. T. Co. would not put its tracks in proper condition. The streets referred to include Notre Dame St., between St. Francois Xavier and Berri Sts. (July, pg. 277.)

**Peterborough Radial Ry.**—We are officially advised that the reconstruction of track on Charlotte, Park and George Streets, rendered necessary by the city paving, is expected to be completed during October. All the material has been ordered. (July, pg. 277.)

**Quebec Ry., Light and Power Co.**—A press report states that the station building on the Champlain Market site, at Quebec, together with the line built there via Sillery to the Quebec Bridge, are likely to be sold by the Dominion Government, to the Q. R., L. and P. Co., and that the line will be electrified. (July, pg. 278.)

**Sandwich, Windsor and Amherstburg Ry.**—The terms of a franchise proposed to be given to the company, or its subsidiary, the Windsor and Tecumseh Electric Ry., for the construction of a belt line in Walkerville, Ont., will, it was reported, Sept. 16, be submitted to the ratepayers for a vote at an early date. (July, pg. 277.)

**Three Rivers Traction Co.**—We are officially advised that track has been laid on streets in Three Rivers, for 3.5 miles. The overhead work is being put up, and a car barn is in process of construction. It is expected to put this line in operation before the end of the year. Very little progress has been made in respect of the suburban line owing to the terms which the municipality asks for a franchise. (June, pg. 229.)

**Transcona, Man.**—The town council has granted a 25 years exclusive franchise, renewable for five years, and at the end of every five years thereafter, reserving to itself the right to take over the line, on terms to be fixed by the Public Utilities Commission. The franchise requires that work be started immediately, the line to the Winnipeg city boundary to be completed first, and the whole of the lines set out in the schedule to be completed within two years. H. W. Adcock, of Winnipeg, who has the charter, states that he proposes to form a company and that he will apply for a Dominion charter of incorporation for the Winnipeg Interurban Ry. Co. (Aug., pg. 319.)

## Electric Railway Finance, Meetings, Etc.

**Brantford Municipal Ry.**—Details accompanying the report of the Commissioners, a summary of which was given in Canadian Railway and Marine World for September, on pg. 358, were presented to the City Council, Sept. 1. The accounts were for six months ended June 30. Of the total earnings of \$42,505.79, the line in the city earned \$20,943.81, and the Grand Valley Ry. \$21,561.98, the operating expenses being \$18,290.04 and \$15,931.85 respectively. During the six months the car mileage run was 123,180 on the Brantford lines, and 82,663 on the G.V.R.

### Cape Breton Electric Co.

	July 1, 1914	July 1, 1914	July 1, 1914	July 1, 1914
	to	to	to	to
	June 1915	June 1914	June 30, 1915	June 30, 1913
Gross earnings	\$27,832.40	\$29,696.95	\$155,597.52	\$167,321.73
Expenses	17,856.21	17,595.13	98,111.36	101,063.51
Net earnings	9,976.19	12,101.82	57,486.16	66,318.22

**Halifax Electric Tramway Co.**—The total earnings for 1914 were \$645,241 against \$605,933 for the previous year. The earnings for the street railway alone were \$319,880 in 1914 and \$301,771 in 1913. The operating expenses and taxes were \$375,123 against \$337,010, and the bond interest was \$30,000 in each year. The net earnings were \$239,818 in 1914 as against \$238,924 in the previous year. During 1914, 7,316,727 passengers were carried, the car mileage being 1,370,430, against 6,876,003 passengers carried, with a car mileage of 1,275,527 in 1913. The capital expenditures in 1914 were \$41,864, and amounts paid in dividends, \$112,000.

### London St. Ry.

	Aug., 1915	Aug., 1914	Jan. 1 to Aug. 31, 1915	Jan. 1 to Aug. 31, 1914
Gross earnings	\$34,273.14	\$37,084.89	\$2,732.17	\$249,048.47
Expenses	28,985.67	24,295.97	182,215.31	177,570.61
Net earnings	10,337.47	12,788.92	75,113.86	71,477.73

**Montreal Tramways Co.**—Subscriptions will be received to October 25, from shareholders of record Sept. 10, for a new issue of common stock at par, in the proportion of one share for every three shares now held. Ten per cent. is to be paid on application, and the balance will be called up as required by the directors upon giving two months notice.

**Oshawa Ry.**—The annual meeting was held at Deseronto, Ont., Sept. 13. Following are the directors for the current year: President, E. W. Rathbun, Deseronto; Secretary-Treasurer, J. H. Valteau, Gananoque, Ont.; Manager, H. W. Cooper, Gananoque, Ont.; other directors, B. R. Hepburn and D. A. Valteau.

**Toronto Ry.**—The receipts from Jan. 1, and the percentages paid to the city, for 1915, compared with those for 1914, are as follows:

	1915	City percentage	1914	City percentage
Jan....	\$ 471,226	\$ 70.486	\$ 501,844	\$ 75.277
Feb....	440,314	67.047	461,274	72.060
Mar....	484,468	93.141	530,751	102.159
Apr....	467,702	93.540	501,435	100.287
May....	468,953	93.790	534,465	106.898
June..	450,582	90.116	525,033	105.106
July..	449,086	88.821	495,882	103.772
Aug....	447,968	89.953	5,7912	101.582
	\$3,684,299	\$686,534	\$4,058,596	\$767,127

**Air compressor outfit for Toronto Civic Railway.**—Tenders were received recently for equipment for the Danforth Ave. car barn and the Commissioner of Works recommended that the Canadian Westinghouse Co.'s tender for an air compressor outfit set complete with motor, making enclosed unit, for \$763 be accepted. He said that it was not the lowest tender but that after careful consideration of the other machines tendered he was of opinion that the Westinghouse would give the best service. The Board of Control accepted the tender.



## Toronto Railway's Proposed Extension on North Yonge Street, Toronto.

The Ontario Railway and Municipal Board gave judgment, Sept. 11, on the application of the Toronto Ry. for permission to extend its tracks from the present terminus on Yonge St., through the subway under the C.P.R., to Farnham Ave., the terminus of the Toronto and York Radial Ry.'s Metropolitan Division. Until recently the greater portion of this piece of roadway was operated over by the Toronto and York Radial Ry., and the Toronto Ry. claims that on the expiry, on June 25, of the franchise under which the operation took place, it had the right to extend its tracks under the agreement with the city in 1891. Pending the settlement of this point, the Toronto Ry. offered to operate, or arrange for the operation of cars to make the connection between its line and its subsidiary, the T. & Y. R. R., but the city prevented such an arrangement being arrived at by removing the rails and overhead equipment, thus leaving passengers to walk between the two termini. One of the chief objections urged by the city against granting the company's application, was that the company had not kept its agreement with the city to obtain the approval of the City Engineer to the plans. The Commissioner of Works admitted having received the plans from the company, but stated that they were addressed "for the approval of the city," and had been sent to the Board of Control, and that therefore they had not formally been sent to the City Engineer for his approval.

In delivering judgment, D. M. McIntyre, K. C., Chairman of the Board, said:—"This objection is at best highly technical, and a somewhat refined attempt to defend what seems to the Board to be an intentional evasion by the City Engineer of his clear duty under the agreement. Here is a contract between the city and company extending in duration over a period of 30 years; it presupposes a genuine intention on the part of each of the contracting parties to co-operate in the elaboration of a street railway system in the City of Toronto and provides machinery and agencies for carrying out that intention, under it slightly over 120 miles of tracks have been constructed, plans of all of which have presumably, under the procedure fixed by paragraph 12, been submitted for his approval to the City Engineer and yet when plans proposing a further extension are submitted to him by the company he shuts his eyes to the plain and obvious meaning of the transaction and fastens upon a phrase in the covering letter as a pretext for evading his clear duty under the agreement. It thus appears that the Commissioner of Works chose to take his stand upon a verbal quibble, ignoring the clear intent and purpose of the company in the transaction and abdicating his functions as city engineer under paragraph 12. The Board finds as a fact that the plans of the extension of the Toronto Ry., showing the proposed position of the rails, the style of rail to be used and the other works in the portion of Yonge St. in question have been duly submitted to the City Engineer as required by paragraph 12 above set out, and that he, in breach of his duty in the premises has neglected to consider the said plans and to approve or otherwise deal with the same thereunder.

"A number of persons were present at the hearing whose testimony was taken. They included persons living in Toronto north of the C.P.R., and residents of County York. All concurred that the absence of railway communication on Yonge St. between the

northerly terminus of the applicant's railway and the southerly terminus of the Toronto and York Radial Ry. was the cause of great inconvenience to thousands of people. Estimates were given that from 10,000 to 15,000 people daily walked between these termini, those northbound being obliged to climb a steep hill. All witnesses concurred that the construction and operation of the proposed extension of the Toronto Ry. would furnish a needed means of transportation and greatly lessen the inconvenience now suffered daily by thousands of people. The members of the board and its engineers have by personal inspection obtained confirmation of the concurrent testimony above summarized. The board finds as a fact that the equipment, appliances and service of the Toronto Ry. in respect to the transportation of persons along the portion of Yonge St. shown on the plans filed are inadequate, and the board is of the opinion that the Toronto Ry. should be required to construct, maintain and operate an extension of its existing lines northerly on Yonge St. with facilities to Y at Woodlawn Ave., as shown on the plans filed, and the board will so order."

The Board on Sept. 21, issued the formal order directing the Toronto Ry. to extend its track from the present terminus on Yonge St., through the subway to Farnham Ave., the terminus of the Toronto and York Radial Ry., and to have cars running on this section by Dec. 1.

The City Board of Control announced its intention of appealing against the judgment and the Mayor stated recently that he considered steps should be taken to obtain legislation to remove the City of Toronto from the Ontario Railway and Municipal Board's jurisdiction. The appeal was heard by the Ontario Court of Appeal, Sept. 27, and was dismissed with costs.

### Electric Railway Notes.

Toronto Ry. employees at the front number 251, of whom 105 are married men.

Commissioner Harrison has recommended the Edmonton, Alberta, City Council to abandon the straight 5c. fare on the Edmonton Radial Ry., and restore the old rate of 6 tickets for 25c.

The Manitoba Public Utilities Commission has ordered the Winnipeg, Selkirk and Lake Winnipeg Ry. to build a shelter at McNaughton, and to provide platforms at the Old Folks' Home, Middlechurch, and at the stop at Murray.

Regina, Sask., ratepayers are being asked to vote on the question of stopping cars being operated on the municipal railway on Sundays. The Sunday cars are being operated at a loss, and it is desired to cut the loss in operation to a minimum by reducing the service on this one day.

All sorts of suggestions are being made to the Edmonton, Alberta, City Council with the object of increasing patronage on the Edmonton Radial Ry. One of the most recent ones is a proposal to allow storekeepers to give tickets as a premium to customers on bargain days. This could only be done by restoring the ticket system on the line.

The Toronto and York Radial Ry. discontinued the sale of commutation tickets of 30 trips between its Toronto terminus and Long Branch, New Toronto and the Humber, Sept. 6. In place of this series, the company is issuing tickets as follows,—

to stop 10, 8 for 25c., stop 25, 7 for 25c., and stop 29, 5 for 25c. In response to a deputation of Long Branch residents, who waited on the management, Sept. 14, it was stated that until the City of Toronto came to some arrangement with the company regarding the operation of the line to the Humber, the company could not enter into any agreement with Etobicoke Tp. respecting fares. The deputation desired the fixing of the rate for tickets at 6, instead of 5, for 25c.

### Mainly About Electric Railway People.

J. H. Moir is reported to have been appointed Traffic Manager, Edmonton Radial Ry., Edmonton, Alta.

A. G. Workman has been appointed Chief Dispatcher, British Columbia Electric Ry., New Westminster, B. C., vice T. G. Connon resigned.

M. E. Morton, Traffic Manager, Fort William Electric Ry., has been appointed by the Ontario Railway and Municipal Board as an official examiner of motormen.

H. W. Cooper, heretofore Secretary-Treasurer, Oshawa Ry., Gananoque, Ont., has been appointed Manager, vice J. F. Chapman deceased, and J. H. Valteau has been appointed Secretary-Treasurer.

A. K. Bunnell, City Treasurer of Brantford, Ont., and a member of the commission managing the Brantford Municipal Ry., was elected President of the Ontario Municipal Association, at the annual meeting in Toronto, Sept. 2.

W. J. Radford, heretofore Cashier, Toronto Suburban Ry., West Toronto, Ont., has been appointed Assistant Manager. Robert Gilbert, heretofore Assistant Manager and Purchasing Agent, has been appointed Purchasing Agent.

John Knox, Treasurer, Dominion Power and Transmission Co., which owns and operates the street railway at Hamilton, Ont., and the various radial railways in that district, died there, Aug. 31. He was a native of Scotland, and resided in Hamilton for 32 years.

J. H. Trimmingham, Superintendent of Power, Sherbrooke Railway and Power Co., Sherbrooke, Que., is acting as General Superintendent during the absence of Major N. C. Pilcher, General Manager, who has gone overseas with the 5th Canadian Mounted Rifles.

Several changes have been made in the Chatham, Wallaceburg and Lake Erie Ry.'s organization. W. Norris, heretofore General Manager, Chief Engineer and Purchasing Agent, is now General Superintendent. J. E. Richards, General Freight and Passenger Agent, has resigned, and A. C. Johnstone has been appointed Accountant.

William John Radford, who has been appointed Assistant to General Manager, Toronto Suburban Ry., Toronto, was born at Boldre, Hants., England, Dec. 23, 1870, and entered railway service with the Great Southern and Western Ry. of Ireland, Jan. 12, 1890, since when he has been, to Feb. 28, 1894, junior clerk, Goods Manager's Office, Dublin; Mar. 1, 1894, to Dec. 12, 1899, station agent, Carlow; Dec. 3, 1899, to May 29, 1902, station agent, Athy; May 30, 1902, to Aug. 13, 1903, station agent, Charleville; Aug. 14, 1903, to Sept. 1, 1904, station agent, Killarney; Sept. 2, 1904, to Dec. 31, 1905, chief staff clerk, General Manager's Office, Dublin; Jan. 1, 1906, to Feb. 28, 1907, English Agent, Liverpool; Mar. 1, 1907, to Aug. 31, 1913, District Agent and Harbor Master, Rosslare, Ireland; Mar. 4, 1913, to June 30, 1915, cashier and office assistant, Toronto Suburban Ry., Toronto.



# Marine Department

## Loss of the s.s. Silver Wings.

The enquiry into the causes which led to the stranding and subsequent loss of the Wind Steamship Co.'s s.s. Silver Wings, on or near Sable Island, Aug. 17, was held at Halifax, N.S., recently, before Lieut.-Commander G. Holloway, R. N. R., acting Wreck Commissioner, assisted by Capts. N. Hall and D. C. Stewart as nautical assessors. Following is an abstract of the judgment:—

The court finds that the loss was caused by the stranding on or about the western end of Sable Island during thick weather. The Silver Wings left New York Aug. 14, with rails, etc., in holds, and two tiers on decks bound for Archangel, Russia. The master did not have his compasses adjusted to ascertain if the steel rails had affected them. From the evidence, even when he had cleared, the weather was clear enough to have swung his ship but he only obtained the deviation on his then course being steered, and again on the afternoon of Aug. 14 he obtained the deviation and on the morning of Aug. 15. Though by the evidence given, he had plenty of time after the stranding to save his deviation book, scrap log book and chart he was working with, they were not produced in court. As the master or mate were unable to inform the court what deviation they had on easterly courses before loading rails the court is unable to state if the compasses had been affected by the carrying of steel rails on deck.

After shaping course on leaving Ambrose light vessel to the time of stranding the weather appears to have been thick with a few clears, yet no soundings were taken, though the ship was constantly in soundings, and even though he steered to pass Fire Island vessel and Nantucket light vessel he did not hear the fog whistle, and changed his course without sounding. The master stated he used the small scale chart of the North Atlantic western portion. At the court he was given a large scale chart and asked to lay down his courses and distances from the data given in the log book. When these were plotted off, instead of taking the ship 45 miles to s. e. of Sable Island, his position placed the ship as really heading for Sable Island at 8 p.m. on Aug. 17, 3½ hours before she stranded, and again at 9 p.m. the ship was hauled to the southward some two points. The master was asked by the court what these manoeuvres were for and stated "I altered because I had so much fog and had read so much of steamers bound from New York to Archangel ramming fishermen. The court on laying down the course as shown by the log book and in applying the correct variation, places the position of the ship some 60 miles to the north and west of stranding position.

The court is unable to understand why he should deem it advisable to haul out twice in the course of one hour to go to the southward of Virgin Rocks, some 400 to 500 miles off. The master gave his evidence clearly and was obviously a man of ability, and the court can only conclude from the evidence given and the log book, that the master laid his first course in error and from then on shaped his course without referring to the chart, otherwise he must have seen his course took him 15 miles inside Nantucket light-vessel instead of to the south. It has not been made plain upon what method of navigation the master was working, as his assumed position and position as shown by

courses laid in the chart are contradictory. We find the master in default for not using the lead and for reckless navigation and therefore suspend his certificate for one year from Aug. 30, but recommend that he be granted a mate's certificate during the period under suspension. The mate, Thomas Jones, kept his log in a very slack manner, only the compass course being shown; he also, from his evidence, showed he took not the slightest interest in the navigation and took over his watch without checking off the ship's position, and we find him in default for not realizing the responsibility of his position as mate and therefore suspend his master's certificate for three months, from Aug. 30, to Nov. 30, without the option of a lower grade certificate being issued.

The court feel called upon to comment upon the following facts: the Silver Wings left the United Kingdom with only the master and mate holding certificates. When the second mate left, shortly before the ship sailed, the boatswain was made chief boatswain, (the court does not realize what this term implies), and kept watch. The owners, according to the master's evidence, did not detain the ship for even a day to endeavor to obtain a second mate nor did they send a man out as passenger to catch the ship in New York. The court hazards the opinion that if the two officers had been carried, at least one of them would have realized that his position carried great responsibility and he was not put on the bridge as a figure head, but the court must point out that legally, for her tonnage, she had the full complement and the master and mate are alone to blame. The court finds that the type of log book as kept on the Silver Wings is not of a class to make the proper entries of ordinary navigation and would recommend that uniform log books be issued by steamship owners where by proper entries would be made.

## The Allan Line s.s. Hesperian Sunk.

The Allan Line s. s. Hesperian was struck, supposedly by a torpedo from a German submarine, Sept. 4, while outward bound from Liverpool, Eng., for Montreal. The passengers and a majority of the crew were removed, and an effort was made to tow her to Queenstown, Ireland, but she sank on Sept. 6. The loss of life has been given as 32, of whom 22 belonged to the crew.

The Hesperian was built at Glasgow, Scotland, and launched at the end of 1907. She was a sister vessel of the same company's s. s. Grampian, and was built to the highest class of the British Corporation for the Survey and Registry of Shipping, on the cellular double bottom principle, and specially strengthened for North Atlantic service. There was passenger accommodation for 500 first and second class passengers and for 1,400 third class passengers, the latter in four berth cabins. All the rooms were tastefully decorated, large dining rooms and music rooms being provided for each class. Electric light was supplied from duplicate plants, so that lighting was assured, and the thermo-tank system of heating and ventilation was installed. She was equipped with a double set of triple expansion engines supplied with steam by boilers operated under forced draught. Her dimensions were, length 502 ft., breadth 60 ft., depth to shelter deck 41½ ft., gross register tonnage about 10,000. She was placed

in service on the opening of the St. Lawrence navigation season of 1908, running between Glasgow and Montreal, completing the run within seven days.

## Navigation Aids on the Great Lakes and River St. Lawrence.

All Canadian lights and fog alarms on Lake Superior will be kept in operation this autumn until the close of navigation, with the exception of those at Caribou Island, Otter Island, Michipicoten Island east end, Gargantau, Michipicoten harbor, Corbeil Point and Ile Parisienne, from which stations the keepers may be removed at any time after Dec. 1. Mariners must not rely on finding any of these lights in operation after that date.

All Canadian lights and fog alarms on Lake Huron, Georgian Bay, Lake St. Clair, Lake Erie, Lake Ontario and connecting waters, will be kept in operation until the close of navigation, excepting the southeast shoal lightship, Lake Erie, which may be forced to abandon her station by ice conditions before the general close of navigation, and also Lonely Island light, Georgian Bay, which may be closed before the general close of navigation.

All Canadian lights on the River St. Lawrence will be kept in operation until the close of navigation. All gas buoys and other floating aids to navigation will be kept as long as ice conditions will permit, and in cases where it is necessary to remove gas buoys before the close of navigation, spar markers will be laid down if possible.

Lightkeepers and mariners will govern themselves accordingly. Lightkeepers are also cautioned to maintain their lights and fog alarms in operation until navigation shall have completely closed, and they are required to satisfy themselves that it has before closing their stations. The keepers of the stations named above will maintain their lights until called for by the Marine Department's steamship.

**Shipping Grain Overseas.**—It was announced in Ottawa, Sept. 22, that the Dominion Government had appointed a sub-committee under the Minister of Trade and Commerce, to deal with the question of shipping grain from Canada. W. Sanford Evans, Secretary of the committee, after enquiring into the situation at Montreal, is reported to have stated on Sept. 21 there were 33 ocean going vessels loading, ready to load, or waiting cargoes there. According to present indications there should be no congestion at Atlantic ports for some time to come, and probably not at all during the winter. Great Britain requires about 12,000,000 bush. a month, and if it can be arranged that the crop be marketed gradually, without rushing, the transportation question can be satisfactorily dealt with.

**Suspension of Coasting Laws.**—There have been persistent rumors for some weeks past that the Dominion Government would suspend the coasting laws so as to permit United States vessels to carry grain from Fort William and Port Arthur to other Canadian ports, a privilege which Canadian vessels have never been given between U.S. ports. Our advices from Ottawa up to September 23 are to the effect that the Government has no such intention.



## Mainly About Marine People.

**Capt. Walsh**, Marine Superintendent, Atlantic Steamships, C.P.R., addressed the Sailors' Club, Montreal, recently, on the responsible part played in the war by the mercantile marine.

**W. G. Ross**, Chairman, Montreal Harbor Commissioners, was elected First Vice President of the American Association of Port Authorities, at the association's annual convention at Los Angeles, Cal., recently.

**Capt. H. I. Matthews**, who died at Colborne, Ont., Sept. 16, after an illness lasting several weeks, was formerly a master mariner on the Great Lakes, but had not been intimately associated with lake transportation for 30 years.

**Lieutenant-Engineer A. Gordon**, formerly a chief engineer on one of the vessels of the C.P.R. British Columbia Service, is reported to have been awarded the Russian Imperial Order of St. Anne, third class, for services on H. M. S. Jupiter, while engaged on the White Sea.

**James Carruthers**, President, Canada Steamship Lines Ltd., has contributed \$100,000 to the Military Hospitals Commission Disablement Fund, for the supplementing of pensions granted by the Government where these are deemed to be insufficient, and for special purposes.

**Capt. John Manson**, keeper of the Colchester Reef lighthouse in Lake Erie for the last 26 years, died at Amherstburg, Sept. 20, aged 75. He was engaged on sailing vessels for a number of years, and prior to being given charge of the lighthouse, was on the old lightship Dunscomb, stationed at Bar Point.

**Wm. McGuinness**, heretofore in the Liverpool, Eng., office of Allan Bros. and Co. of United Kingdom Ltd., has been appointed Manager of that company's office in Glasgow, Scotland, vice W. McK. Rodan, General Passenger Agent Allan Line Steamship Co., and Glasgow Manager Allan Bros. and Co. of U. K., who has returned to London, Eng.

**C. A. Jaques**, who was formerly interested in marine affairs, in connection with the Merchants Montreal Line, the C. A. Jaques Transportation Co., etc., has, in conjunction with A. M. and F. H. Jaques, incorporated Everyman's Car Co. Ltd., with \$40,000 capital and office at Ottawa, Ont., to manufacture and deal in motor cars and similar vehicles.

**R. A. Spawton** has not been appointed Purchasing Agent of the Marine & Fisheries Department at Halifax as reported in the daily press, and we are informed that no such appointment is contemplated. He has been a clerk at the Halifax agency for a number of years, and has been entrusted recently with purchasing such local supplies as the agency may require from time to time.

**Capt. P. M. Campbell**, who died at Collingwood, Ont., Sept. 10, aged 69, was a native of the Maritime Provinces, and had commanded vessels on the Great Lakes since the early sixties. He was one of the founders of the Georgian Bay Navigation Co., the name of which was changed in 1880 to Great Northern Transit Co. This company was amalgamated with the North Shore Navigation Co. in 1899, under the name of the Northern Navigation Co. of Ontario, and is now a subsidiary of Canada Steamship Lines Ltd. He was also one of the founders of the Collingwood Drydock Co., now the Collingwood Shipbuilding Co., of which he was a director at the time of his death. One of his sons, Capt. A. L. Campbell, is in command of the Northern Navigation Co.'s s. s. Huronic.

## Atlantic and Pacific Ocean Marine.

The contract for the repair of the s.s. Hendon Hall which was wrecked in Trinity Bay, in Nov., 1914, has been awarded to the Davie Shipbuilding Co., Levis, Que.

The s.s. Bengore Head, which was damaged in collision with the s.s. Batiscan, early in August, and taken to the Davie dry dock at St. Joseph de Levis for repairs, was finished and discharged from the dock, Sept. 9.

The U. S. s.s. Allaguasha, bound from Copenhagen, Denmark, for New York in ballast, put in at St. John's, Nfld., Sept. 12, for temporary repairs, after a collision with the Parrsboro, N.S., barque Ravenscourt, 20 miles from Cape Race, Sept. 10.

A steamship named Iceland, intended for the Newfoundland sealing industry, was launched in Scotland recently, and it is announced that she may be taken over by the Russian Government for ice-breaking service at Archangel, instead of crossing to Newfoundland.

The Allan Line s.s. Pretorian, which collided with the s.s. Kansan, off the mouth of the Saguenay River, in the St. Lawrence, Sept. 15, arrived at Montreal, Sept. 17, under her own steam. After discharging passengers, mails, etc., she was dry-docked for examination and repairs.

The France and Canada Steamship Co., Ltd., has been incorporated under the Dominion Companies Act with \$1,000,000 capital and office at Montreal, to carry on a general steamship business between Canada and France, and to own and operate steam and other vessels in connection therewith.

The Maskinonge Steamship Co., Ltd., and the Laurentian Steamship Co., Ltd., have been registered in Liverpool, England, to take over certain steamships from Bowring and Co., together with certain contracts between that firm and the Dominion Coal Co. The first named company has a capital of £20,000, and takes over the s.s. Maskinonge, and the latter company has £75,000 capital, and takes over the s.s. Batiscan and s.s. Kamouraska.

The Ulster Steamship Co., owning the s.s. Bengore Head, has served a writ on the owners of the s.s. Batiscan, under charter to the Dominion Coal Co., for \$150,000 damages sustained when the two vessels collided in the St. Lawrence recently. It is reported that the owners of the Batiscan intend suing the Bengore Head owners for \$50,000. At the recent investigation into the causes of the accident, the judgment of the Dominion Wreck Commissioner, which is given in this issue on another page, held that the Batiscan was solely to blame.

The Federal District Court at New York City, recently authorized P. A. S. Franklin, receiver for the International Mercantile Marine Co., to pay \$5,250,000 for five steamships owned by the Pacific Mail Steamship Co., operating on the Pacific. The vessels were bought for the Atlantic Transport Line, a subsidiary of the International Mercantile Marine Co. Following are particulars regarding them:—

Name.	Built.	Gross tons.	Cost.	Selling price.
China	1889	5,060	\$ 800,000	\$ 250,000
Korea	1902	11,276	2,200,000	1,000,000
Manchuria	1904	13,369	2,600,000	1,500,000
Mongolia	1904	13,639	2,600,000	1,500,000
Siberia	1902	11,284	2,200,000	1,000,000

The Union Steamship Co., of New Zealand, is reported to have purchased the British s.s. Maritime, and it is said that she will be placed in service between Australasia and Canada. The s.s. Maritime was formerly the Norddeutscher Lloyd s.s. Schlesien, and after being captured by the British, she was condemned by the prize

court and sold to the Maritime Steamship Co., Liverpool, who renamed her Maritime. The price paid for the vessel at the prize court auction is reported as \$326,000, and the price paid by the Union Steamship Co. is said to be \$600,000.

## Maritime Provinces and Newfoundland.

An order in council has been issued establishing a permanent harbor quay line at Halifax, N. S., beyond which wharves, piers, breakwaters, etc., shall not in future be built.

An explosion took place on board the Newfoundland schooner Hiawatha, at Halifax, N.S., Sept. 10, and three members of the crew died as a result of injuries received. The vessel was loaded with gasoline, valued at \$5,000, and as a result of the subsequent fire was, with about 30 ft. of the wharf, destroyed.

The Marine Department announces the removal, on or about Sept. 30, of the lightship maintained on Lurcher shoal, off Yarmouth, N. S., for repairs. During the absence of the vessel, the station will be marked by a combined gas and whistling buoy, painted red, and showing an occulting white light. It is anticipated that the vessel will be replaced on or about Nov. 1.

The Reid Newfoundland Co.'s s.s. Home, which has for some time been doing coastal work at Green Bay, has been placed on the Cabot Strait service temporarily, taking the place of the s.s. Bruce, which was sold to the Russian Government recently for icebreaking service at Archangel. The company has not as yet made any arrangements with regard to the permanent replacement of the Bruce.

The Public Works Department's District Engineer reports that the channel through the bar at the entrance to South Ingonish, N.S., was originally dredged to a width of 200 ft. and a depth of 14 ft., but it has gradually narrowed and shoaled. In 1909 a dredge was engaged in deepening the channel to 20 ft., and widening it to 180 ft., but the work was not completed, and at present a channel, not quite straight, with an average width of 130 ft. is available with the full depth of 20 ft. The channel is marked by three starboard and three port hand buoys.

## Province of Quebec Marine.

Considerable progress has been made during the summer on the St. Charles River improvement works. It is expected that the dam above the locks will be completed by the close of navigation. Dredging on the new course of the river is proceeding actively. On the Louise embankment the area southeast of the locks is to be filled in and used as a freight yard. Quinlan & Robertson are the general contractors.

The Marine Department has established two pairs of day beacons to mark the channel in Lake St. Peter leading to the mouth of the Petite Yamachiche River. The Department has also announced that in order to obviate confusion between the Boucherville range lights and the Boucherville west range lights, the former, nos. 1439 to 1440, are now designated as the Grosbois range lights, and the latter, nos. 1447.4 and 1447.5, as Daigneault range lights.

A Montreal press report states that Canada Steamship Lines, Ltd., is guaranteeing to every employe, married or single, who enlists for service at the front, his position on his return, and will insure the lives of all married employes who enlist. The com-



will be paying the dependents of employees who have enlisted, whether married or single, \$10 a month. It will also advance training fees to those who enlist in the aviation training corps.

### Ontario and the Great Lakes.

The Public Works Department has dredged a channel to Port Darlington, to 14 ft. deep. Between the piers for 1,300 ft. there is a bottom width of 100 ft., the edge of the channel being 25 ft. from each pier. From the end of the piers southerly the channel widens from 100 ft. to 210 ft. in about 250 ft.

W. Evans, John Dodds, J. B. Stewart and G. M. Arnold, Inspectors of Boilers and Machinery, under the Canada Shipping Act, for the port of Toronto, have also been appointed officers to superintend the measurement of ships there, in place of A. R. Stanbury, Measuring Surveyor since 1908, who has resigned.

The U. S. Survey reports the levels of the Great Lakes in feet above tidewater, for August, as follows.—Superior 602.41; Michigan and Huron 580.11; Erie 572.34; Ontario 245.43. As compared with the average August levels for the past ten years, Superior was 0.23 ft. below; Michigan and Huron 0.87 ft. below; Erie 0.32 ft. below and Ontario 1.21 ft. below. It was anticipated that during September, Superior would be 0.1 ft. higher; Michigan and Huron, 0.2 ft. lower, Erie 0.3 ft. lower and Ontario 0.4 ft. lower.

The Cadillac Steamship Co.'s s.s. Western Star, owned in Cleveland, Ohio, struck on Robertson rock, north of Clapperton Island, off Manitoulin Island, Sept. 24, and sank in about two hours. The four passengers and crew of 20 were all saved and taken to Little Current. It is stated that the vessel and cargo of 7,000 tons of coal for Little Current will probably be saved. The Western Star is a steel vessel, built at Wyandotte, Mich., in 1903, equipped with triple expansion engines 22 x 35 x 58 x 42 ins., supplied with steam by two Scotch boilers 13 x 11½ ft. at 170 lbs. under induced draught. Her dimensions are: Length, 416 ft.; breadth, 50 ft.; depth, 28 ft.; tonnage, 4,764 gross, 3,593 register.

The Canadian Stewart Co.'s steam tug J. C. Stewart, which arrived at Toronto re-

cently, for use in connection with the harbor development work there, was built at Ferrysburg, Mich. She is of steel throughout, with accommodation for the master in the wheel house on the top deck, and for a crew of 12 on the main deck. She is equipped with fore and aft compound engines with cylinders 14 and 30 ins. diam. by 24 ins. stroke, supplied with steam by a Scotch boiler 10 by 11 ft. at 150 lbs. The tug's dimensions are, length 81 ft. 9 ins., beam 20½ ft.

The Montreal Transportation Co.'s s. s. Fairmount is reported in a dispatch from Kingston, Jamaica, to have been abandoned as a total wreck on the Point of Flat Clays, near Acklin Island, Bahamas. The Fairmount was under charter to the Inter-American Steamship Co., and when wrecked was en route from Newport News, Va. to Cienfuegos, with coal. She was built at Newcastle, Eng., in 1903, and was of steel with triple expansion engines with cylinders 21 x 35 x 58 x 39 ins. stroke, of 1,200 i.h.p., supplied with steam by 2 Scotch boilers 14 ft. by 10 ft. 8 ins. at 180 lbs. Her dimensions were, length 248 ft. 6 ins., breadth 42 ft., depth 23 ft., tonnage, 1895 gross, 1184 register. Prior to entering the Atlantic and coasting trade this year, she was operated in the Great Lakes trade.

### Manitoba, Saskatchewan and Alberta.

The steamboat Princess, operating between the Saskatchewan and Regina beaches at Regina, Sask., struck a pile at Saskatchewan Beach, Sept. 6, and sank in a few minutes, in about 6 ft. of water. It is stated that she will be raised and repaired to be ready for service next year.

C. F. Law, of Vancouver, B.C., who represents the interests of the Peace River Tramway and Navigation Co., with which D. A. Thomas, the British Government representative in this country regarding munitions, is closely associated, was in the Peace River District early in September, and when in Edmonton, Alta., is reported to have stated that work had been commenced on the construction of the first of three steamships for operation on the rivers and lakes north of Edmonton. Canadian Railway and Marine World has already given some details of this vessel. Of the two other vessels mentioned, one, it is stated,

will be run on the waterways below the Chutes, and the other, which will be the largest, is intended for the Mackenzie River.

### British Columbia and Pacific Coast.

C. H. Nicholson, Manager, G.T. Pacific Coast Steamship Co., is reported to have stated that the company will operate in the Alaska trade next spring with the steamships Prince Rupert and Prince George.

The G.T. Pacific Coast Steamship Co.'s s.s. Prince Albert, which has been operating on a charter between San Francisco and Los Angeles for some time, has returned to the British Columbia coast service.

The first steamship repair to be undertaken in the Grand Trunk Pacific dry dock at Prince Rupert, was on the s.s. Delhi, which was wrecked on the Alaskan coast recently, and salvaged and towed to Prince Rupert by the tug Sea Lion.

The Shell Co., of California, Inc., proposes to build a wharf and dock on the foreshore of a portion of district lot 215, group 1, New Westminster District, B. C., and has deposited plans with the District Registrar of Titles at New Westminster.

It is reported that the Dominion Government will call for tenders shortly for the construction of a wharf and shed at Vancouver, 700 x 80 ft. wide. The building will be of structural steel and sheet metal on a concrete base. The approximate cost is mentioned as \$250,000.

The Public Works Department has dredged the channel at the mouth of the Pitt River between Douglas Island and the mainland, to 25 ft. depth at low tide, and to 300 ft. wide from the upper end of the cut to the lower end of Douglas Island, and 150 ft. from there to deep water in the Fraser River.

Ocean Fisheries, Ltd., has been incorporated under the British Columbia Companies Act, with \$200,000 capital and office at Victoria, to carry on a general fishing business, and in connection therewith to own and operate steam and other vessels of all kinds. The incorporators are R. T. Elliott, K.C., H. H. Shandley, S., and R. Balcom and A. R. Langley, Victoria, B.C.

The West Vancouver council is considering a proposal to purchase the West Vancouver Ferry Co., and to operate the property as a public utility. A press report states that the company has offered to sell to the municipality for \$8,000, the latter to assume all the indebtedness of the company. The company was organized in 1912, and has not been a financial success.

Reports advise that the channel at the mouth of the Fraser River is only 24 ft. deep, compared with 28 ft. last winter and spring. The cut for the channel which was completed about a year ago, gave a channel 400 ft. wide and 29 ft. deep. Since then the channel has narrowed to 300 ft. It is suggested that if the channel were widened on the south side at the outer end about 400 ft. and made about 200 ft. wide at the inside end, the current would run through the cut, which is about 3,000 ft. long, and carry the sand deposit into the gulf.

**Ocean Vessels for Grain.**—The Minister of Railways and Canals, when in Winnipeg, Sept. 10, is reported to have stated that he understood from the Premier that complete arrangements had been made for the transportation across the ocean of all the grain which offered during September, after which further arrangements would be made, the Admiralty releasing more vessels as they were required for that purpose.

### Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during August.

ARTICLES		CANADIAN CANAL	U. S. CANAL	TOTAL
Copper.....	Eastbound	Short tons 2,012	13,952	15,964
".....	"	Bushels 1,177,406	1,084,874	2,262,280
Flour.....	"	Short tons 303,088	507,480	810,568
".....	"	Barrels 481,509	7,388,520	7,865,029
Pig iron.....	"	Short tons 2,550		2,550
".....	"	M. ft. b.m. 3,029	68,116	71,145
".....	"	Bushels 1,860,971	577,309	2,438,280
General merchandise.....	"	Short tons 17,122	23,788	40,910
".....	"	Number 4,531	4,719	9,250
Coal, hard.....	Westbound	Short tons 11,000	268,948	279,948
Coal, soft.....	"	" 73,090	1,697,922	1,771,012
".....	"	Barrels.....		
".....	"	Bushels.....		
".....	"	Short tons 1,068	19,157	20,215
".....	"	".....		
".....	"	Barrels 140	96,307	96,447
".....	"	Short tons 45,385	160,518	205,903
".....	"	Number 4,619	4,738	9,357
Summary.				
Vessel passages.....	Number	551	2,668	3,219
Registered tonnage.....	Net	1,033,870	7,240,604	8,283,474
Freight—Eastbound.....	Short tons	618,257	7,630,980	8,249,237
—Westbound.....	"	130,553	2,160,991	2,291,544
Total freight.....		748,810	9,791,971	10,540,781



## The Batiscan-Bengore Head Collision.

The formal investigation was held at Quebec recently, into the causes of the collision between the steamships Batiscan and Bengore Head, off Cape Salmon in the River St. Lawrence, Aug. 1, before Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. F. Nash and J. A. Murray, as nautical assessors. The following summing up and judgment were made by the Wreck Commissioner, and concurred in by Capt. F. Nash, Capt. J. A. Murray dissenting on the matter of sentences,—

With regard to the Bengore Head, it may be said that the testimony of the master and pilot was straightforward, and corroborated by both the scrap and officer's logs. A proper course was steered up to and after passing Morin Shoal. The various orders to the engine room, the sounding of one blast on the whistle, and porting slightly in order to pass further from the other ship which was sounding two blasts, prolonged blasts, were proper. The hard a-porting and putting of the engines full speed astern were done in the agony of the collision, and in view of the existing circumstances, if no signals were given indicating these evolutions, it is excusable.

Regarding the Batiscan a multitude of conflicting statements appear in the evidence of the master, especially in his cross examination, the scrap and officer's log books contradicting his deposition to a certain extent, or incidents were not properly entered. We cannot accept his version, as the evidence is contradictory and uncorroborated so far as the logs are concerned.

The court having carefully examined the evidence adduced, finds; That the Batiscan is alone to blame for the collision. The nature of the impact, the damage done, in view of the nature of the cargo on the Bengore Head, which was composed of articles which offered an almost solid wall, indicates beyond the shadow of a doubt, that the Batiscan had, at the time of the collision, some considerable way on her, which is contrary to the evidence of the master, who avers that his ship had sternway to the extent of two knots. His admission that he sounded several two prolonged blast signals prior to the collision, wishing to indicate to the oncoming vessel that his ship was still in the water, induces this court to say that this was a misleading movement, and a wrong signal to give when his ship still had headway. He also admitted that his telegraph remained at full speed, though his speed was less owing to the reduction of steam. Article 16 of the Rules of the Road, says that a steam vessel hearing apparently forward of her beam, the fog signal of a vessel, the position of which is not ascertained, shall, so far as the circumstances of the case admit, stop her engines and then navigate with caution until danger of collision is over. In this case it is apparent that this article was not carried out. As to the sounding of the blasts from each vessel there appears to be no contradiction, except as regards the sounding of the three blast signal by the Batiscan, only we cannot credit that the Bengore Head, after, according to the evidence of the witnesses, of the Batiscan crossing from port to starboard, to the extent of six points, would describe half a circle and come back partly across the bow of the Batiscan, and be struck where she was. We do not find anything in the evidence to indicate that the Bengore Head adopted a wrong movement. Her porting her helm prior to the collision was a proper operation, in view of the two blasts she was hearing from the other ves-

sel. We say that in view of the evidence adduced, we find that Capt. Green, who was, prior to and at the time of the collision, in gate with caution. Hence we suspend his full command of the Batiscan, did not navigate certificate no. 3566, for two years from Aug. 16, with the proviso that on Aug. 1, 1916, a certificate as first mate shall be given to him to be retained until the expiration of his suspension, Aug. 16, 1917. With respect to the pilot of the Batiscan, Jules Lachance, we claim that the collision is due to bad seamanship, and not to lack of local knowledge, and that the master had assumed the giving of the orders; but with the acquiescence of the pilot, who was consulted. Therefore we hold the pilot partly at fault, and fine him \$300, payable \$100 a month. The second officer, who acted subject to the instructions of the master and pilot, is held blameless.

With respect to the Bengore Head we have no criticisms to make as to the conduct of the master or officers, and therefore exonerate them from blame. We also exonerate the pilot, Alfred Raymond, of the Bengore Head, of any fault in bringing about the collision; but we regret to state that leaving his post at such a crucial moment, when his services were immediately needed by the master to beach the vessel, shows unreliability in the moment of danger. He has a clean record, and one which up to this, has been absolutely above reproach, and had others of the crew abandoned their posts, and been found on the Batiscan, we would have analysed his action less severely; but he was the only one. That nothing more serious happened to the Bengore Head whilst he was absent, does not lessen the degree to which he was at fault in this respect, and having pronounced him unreliable the court has no alternative but to cancel his license, which it hereby does. Counsel for the Bengore Head, F. E. Meredith, K. C., in his address to the court, criticized in a forcible manner the instructions, or sailing directions issued to the master of the Batiscan, Capt. Green, by the charterers, the Dominion Coal Co.; but after consideration this court has determined that it is beyond its jurisdiction to comment on such document, other than to say that it behoves those interested to unite and discuss the possibilities of formulating instructions which will leave no room for wrong interpretation.

Capt. J. A. Murray, in dissenting, wrote:

Although I quite concur in the main points of your decision, I would ask you to kindly reconsider the sentence passed on Capt. Green and Pilots Raymond and Lachance.

Might I suggest that you reconsider the total suspension of Pilot Raymond's certificate. When he left the bridge he was told the ship was sinking, and although we feel he ought to have stood by the Captain, he had been told the ship was sinking, the crew had been ordered to the boats, and he, I am sure, in his own mind, felt justified in trying to save his life. Moreover, he was man enough to admit he would not do the same thing again. Furthermore, his past record is excellent.

With reference to Captain Green, might I suggest that he be granted a mate's certificate in the interim.

With regard to Pilot Lachance, as far as the actual working of the ship, Captain Green seemed to be in full charge and as such, in my opinion, assumed all responsibility; and if you concur possibly a lighter sentence might meet his case.

## Grounding of the s.s. Romera.

An investigation was held at Montreal recently, into the causes of the stranding of the British s. s. Romera on the south shore of the River St. Lawrence, between Capes Dog and Salmon, Aug. 16, before Capt. L. A. Demers, Dominion Wreck Commissioner, and Capt. F. Nash and Jas. Black as nautical assessors.

The vessel, which is owned by the Glasgow United Shipping Co., was bound to Montreal from Boulogne, France, and took a pilot on board at Father Point. When in the vicinity of Red Island, the weather thickened with a mixture of fog and smoke. The master stated that although he had been three times in the St. Lawrence this year, he was somewhat a stranger to the route. He had had the same pilot on each occasion and had found him reliable and attentive to his duties. He left all the shaping of the courses to the pilot. The pilot, Arthur Lachance, stated that he had been piloting for 28 years without an accident for which he had been found at fault. The only cause to which he could attribute the grounding, was that the tide, which was ebbing, must have had a tendency to draw the vessel ashore. The courses steered were the usual ones, and there was no possibility of taking a bearing, as the land was not seen.

The following judgment was delivered,—the court having carefully weighed the evidence finds the pilot, Arthur Lachance, alone to blame. We accept his statement that he steered his usual courses without, in this case, having regard to the state of the tide or current affecting his ship. He has had a considerable period of service, and a good record, and we shall not use severity, for what we consider an error of judgment on his part, and, therefore, we condemn him to pay a fine of \$100, by Oct. 1. We call his attention, and that of all pilots, to the fact that a safe course can be so considered only when all factors likely to cause ships to deviate, sensibly if not visibly, are taken into account. The fact that the master and second officer supposed the ship to be from 1 to 1½ miles off Cape Dog when abeam; also that there was no anchorage ground in the immediate vicinity, and that the ship was being navigated slowly, the rules of the road being observed to the letter, induce us to deal with the pilot in a lenient manner. As the master and second officer were practically strangers in these waters, and had had the same pilot on three previous occasions, and found him reliable and attentive, it is quite natural to suppose that they relied on his statement that the ship was 1½ miles off Cape Dog. We therefore exonerate both the master and second officer from all blame in connection with this casualty. The action of the master in putting his helm hard starboard, and ordering his engines full speed ahead, to give further impetus to the ship so that she might answer her helm promptly, was proper under the circumstances.

The American Association of Port Authorities held its annual convention at Los Angeles, Cal., Sept. 16. The 1916 convention will be held at Montreal in September. W. G. Ross, Chairman, Montreal Harbor Commissioners, has been elected First Vice President of the association for the current year.

J. H. Welsford, the head of the Union Steamship Co. of British Columbia, and other shipowning companies, has given the use of his country home near Chester, Eng., as a hospital for wounded soldiers. The cost of equipment for the accommodation of 90 men has been paid by him.



### The Ontario Car Ferry Company's Car Ferry Ontario No. 2.

This vessel made her first trip on the route between Cobourg, Ont., and Rochester, N. Y., Sept. 16. A machinery trial trip took place at Toronto, Aug. 28, when a number of those interested in transportation had a couple of hours run on the lake at the invitation of the builders. It is not the company's intention to place her in regular service at present, the car ferry Ontario No. 1 remaining in service for the remainder of the passenger season, when Ontario No. 2 will take up the freight business for the winter and be fitted out for passenger service in the spring. In the meantime Ontario No. 1, will be taken off the route and thoroughly overhauled.

The Ontario No. 2, which is practically a sister vessel of the Ontario No. 1, was built

14 by 12 ft. fitted with forced draught, and carrying 180 lbs. of steam. A detailed description of the vessel was given in Canadian Railway and Marine World for April, 1914.

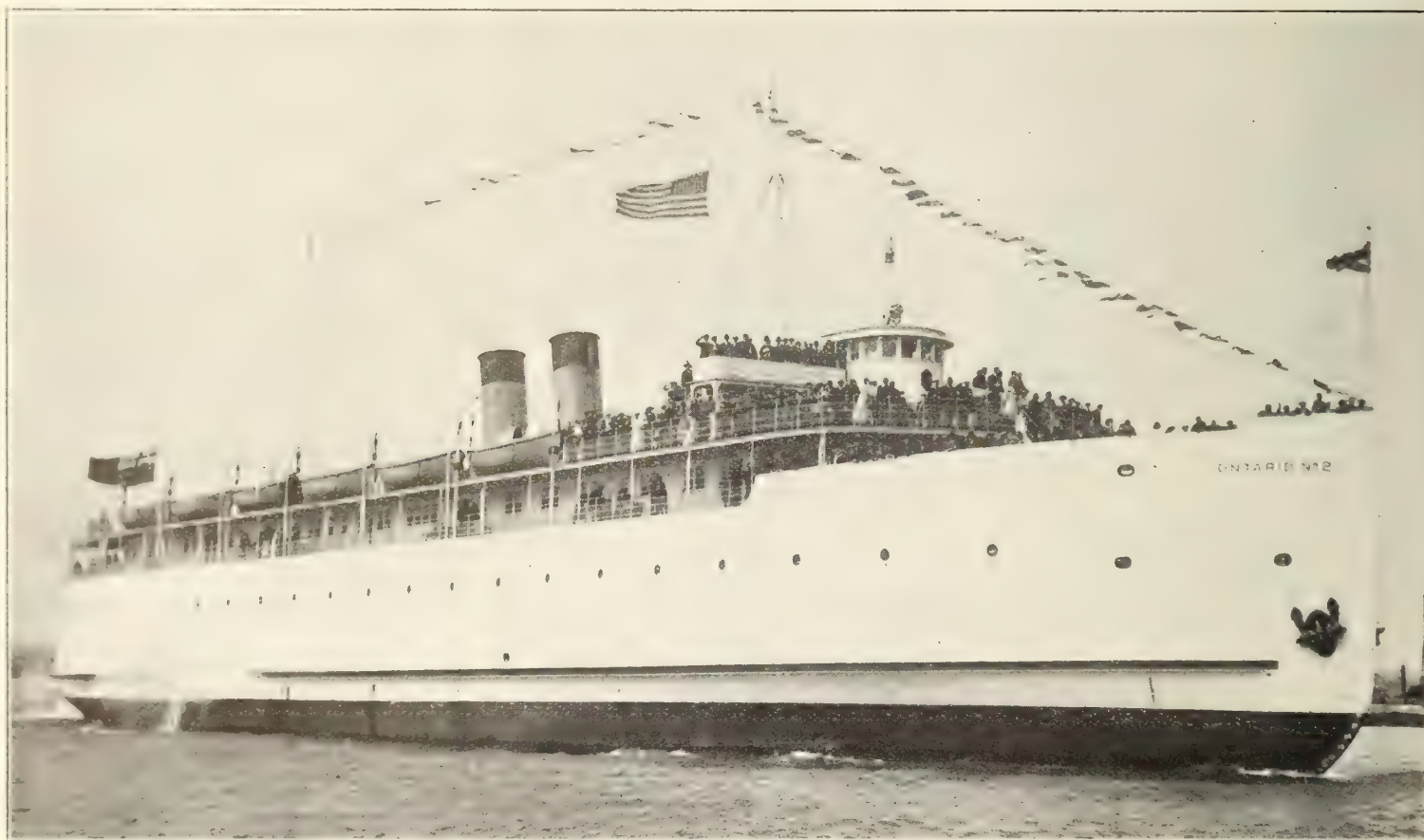
### The Loss of the s.s. Alexandria.

An investigation was held at Toronto, Aug. 30, by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capts. Jas. McMaugh and Jno. Williams, into the causes of the loss of Canada Steamship Lines s. s. Alexandria off Scarboro Bluffs, near Toronto, Aug. 3.

The master, Wm. Bloomfield, stated that he was bound from Port Hope to Toronto, and on leaving port the weather was thickening intermittently with a light wind astern and very little sea. Later in the day, the weather being misty, he changed his course to make

the starboard boats, and lines were fastened so that they could make shore and be brought back again; but this method was ineffective. The crew were rescued by the life saving crew there, and employees of the company, about 3 o'clock a.m., the ship having been exposed to the storm from about 5.30 the previous evening. The first officer corroborated the master as to weather conditions, and said that he left the master in charge of the steering when he received an order to jettison some of the cargo from the forward hold, to increase the draught aft, she being then 6 ins. by the head; but this was found ineffective. The wheelsman testified that the ship steered well in ordinary circumstances; but on this occasion, in view of the strength of the wind and seas she would not answer her helm and became absolutely unmanageable.

After carefully weighing the evidence ad-



The Ontario Car Ferry Company's Car Ferry Ontario No. 2.

by Polson Iron Works, Ltd., Toronto, and is of the shelter deck type, with four tracks on the main deck, which is of steel throughout without wood sheathing. The shelter deck is of steel laid flush, with a steel deck house running throughout its greatest length, with accommodation for passengers, officers and crew. The hull is divided by six water tight transverse bulkheads extending from the keel to the main deck with a longitudinal bulkhead along the centre line. The vessel has capacity for 28 loaded cars of 68 tons gross weight each, and 200 tons of fuel in the bunkers. The draught is 16½ ft. when fully loaded, and the normal speed will be 13 miles an hour, but the machinery is capable of making 15 miles an hour on emergency. The propelling machinery consists of two triple expansion jet condensing engines with cylinders 20½, 33 and 54 ins. diam., by 36 ins. stroke, running at 110 r.p.m., and supplied with steam by four Scotch boilers

out the land and perceived he was in the vicinity of Frenchman's Bay, and hauled out on his former course. Shortly after a strong wind arose and the vessel became unmanageable. He tried to bring her towards the land, or to keep her away from the land, but she broached to, and the seas striking her, the anchor shutters were carried away and the water got into the gangways and the holds. When advised by the engineer that there was a certain quantity of water in the hold he attempted to make the land; but the ship would not answer her helm. The wind increased until it rose to a heavy gale, and the seas roughened rapidly, and therefore, knowing that his ship had been repaired, and was stronger at the stern than at the bow, he backed her to the shore, and finally grounded at Scarboro Bluff. At the time she grounded there were some 3 ft. of water in her hold, and the fires were put out shortly before. He gave orders to lower

qued, with respect to the navigation of the vessel, and the statements of witnesses regarding the strength of the wind on that afternoon, when it was proved that ships of stronger build than the Alexandria had to return to port in view of the wind conditions, which reached the velocity of a hurricane, the court finds that the master, in view of his idea of consideration for the lives of the crew under his care, and thinking he was justified in beaching his vessel owing to his being under the impression that if he went out further to sea his ship could not have stood the fury of the gale, and the seas, which had already done considerable damage, in fact to such an extent that she was making water, was not guilty of fault. The method adopted by the Master in beaching his vessel appears, on the face of it, a peculiar one; but owing to the conditions already mentioned as existing, the vessel could not be brought over to star-



board, would not answer her port helm. He pursued an unusual course of backing his vessel to the shore, which, however, appears to have been successfully performed. We may say that under the circumstances the fact that no lives were lost is providential. In view of the conditions prevailing at that time, the nature and build of the

vessel, her light draught, about 7½ ft., we exonerate the master from all blame with reference to the loss of his ship. As the mate did not take part in the operations, having been away from the bridge superintending the jettisoning of the cargo along with the rest of the crew, he is not held to blame in any way.

## Shipping Letters From the Head of the Great Lakes.

Sept. 11.—F. & W. Jones, shipping brokers, Port William, Ont., have written:—

Arrivals of coal at these ports are still very light, only seven cargoes being unloaded during the week, five bituminous and two anthracite—two were carried in United States steamships and five in Canadian. Two steamships are now at the docks and two are reported en route. Shipments of coal by car to the west is on the increase, but is by no means up to normal as yet. The Canadian Pacific Ry. has been receiving on company's service coal fairly steadily all through the season and, with its buyings from the western mines, has nearly enough to take care of its requirements for autumn and winter. Arrivals of C.P.R. on company's service coal will not amount to any large bulk. The National Transcontinental Ry. has also been receiving in large quantities the past few months and no heavy rush is looked for from that direction. Although the Canadian Northern Ry. has had a good run of o.c.s coal all the season its coal consumption this year will greatly exceed that of last year on account of its new line from Port Arthur east being put into operation this autumn. In all probability the fueling of all its eastbound trains will be done from Port Arthur, and any other point which may be opened as a fueling point will be served from these ports. Therefore it is quite likely that this road may still get in a quantity of coal.

One cargo of ore was shipped to Cleveland this week. No charters are reported for immediate loading. The total shipments of ore this year are approximately 60,000 tons; this was carried in 17 cargoes, three were in U. S. vessels and the balance in Canadian. There are approximately 25,000 tons

still to be shipped, the majority of this is now on the dock.

Sixteen cargoes of grain have gone east this week—two of these were in U. S. bottoms and billed to Buffalo. The total shipments this week were 851,853 bush. of all grains, compared with 449,831 bush. last week. New grain has commenced to arrive at a good rate, the approximate receipts of the new crop being: 1,880,000 bush. wheat, 90,000 bush. oats, 185,000 bush. barley. Stocks show a decided increase, being 3,275,637 bush. of all grains, as compared with 1,566,927 last week.

Several U. S. vessels are chartered to load grain at these ports during the coming week and there is no doubt that from now on the harbors will be very busy. The elevators have announced that after Sept. 15, until the close of navigation, they will work Sundays and nights, without charge to the vessel.

Sept. 18.—Coal arrivals show an increase and one anthracite. Dispatch in load-out and one anthracite. Dispatch in loading is very good at all docks, all docks are working to capacity, although as yet no night work is being done, but it can be arranged when the necessity arises. Four steamships are en route, all bituminous. Car shipments to the west are about the same as at last writing, steady, but not up to the regular bulk usual at this time of the year.

No ore was shipped this week. One vessel is chartered, and will be at the dock early next week.

Grain shipments from the Canadian head of the lakes show a decided improvement. The total shipments are 3,106,453 bush. of all grains. Of this, 646,666 bush. went to Buffalo in three U. S. steamships and one

Canadian. The balance, 2,460,187 bush. was carried in Canadian steamships to Canadian ports. Receipts are coming in slowly for this time of the season, the reason for this being the bad weather that has prevailed all over the Northwest the last week. Conditions are improving and large receipts are looked for from now on. Dispatch in loading cannot be considered good as yet. Stocks are scattered and shippers are having difficulty in getting their cargoes together. As stocks increase dispatch will necessarily improve. The autumn rush cannot be considered to have begun, but by the last of the month these two ports should be taxed to their fullest capacity. Stocks in store, receipts and shipments during the week are:

	Stocks.	Receipts.	Shipments.
Wheat .....	2,983,871	3,900,292	2,875,167
Oats .....	147,059	87,520	66,281
Barley .....	242,073	168,948	135,906
Flax .....	994,815	3,208	.....

## Big Steamships and Economic Ocean Transportation.

A dozen years or more ago there was a great deal of discussion as to the rapid increase in the size of ships and its influence on economic freight carriage at sea. About that time J. J. Hill, President of the Great Northern Ry., gave a contract for the construction of two of the largest vessels ever built for freight carrying to run in Trans-Pacific service in connection with that railway. The end of that experiment has just been announced. One of those two huge vessels, the Dakota, was stranded after she was put into service, and became a wreck before she could be hauled off. The other, the Minnesota, after experiencing various vicissitudes, was continued in service and only recently was said to have transported across the Pacific the largest cargo of freight ever transported by a single ocean vessel. Notwithstanding this and the high rates for ocean freight now prevailing, it is announced that the railway company has decided to retire her from service and offer her for sale. While it is quite possible that the impending changes in the United States navigation laws may have something to do

## List of Steam Vessels Registered in Canada During August, 1915.

No.	Name	Port of Registry	Where and When Built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Engines, Etc.	Owner or Managing Owner	
98579	Aranmore .....	Ottawa .....	Dundee, Scot'land..	1890	241 5	24 8	15 7	1,170	502	280 sc ..	Minister of Marine and Fisheries, Ottawa, Ont.
125427	Canadian .....	Montreal .....	Newcastle, Eng....	1907	248 3	43 0	22 8	2,214	1,444	186 sc ..	Canada Interlake Line, Ltd., Toronto
112356	Cecilia S. (a) ..	Brockville, Ont....	Buffalo, N.Y. ....	1875	95 6	13 6	6 8	77	33	33 sc ..	J. H. Simpson, Brockville, Ont.
134461	Edith H. ....	Halifax, N.S. ....	Allandale, N.S. ....	1915	75 0	21 8	7 3	85	58	18 sc ..	A. G. Heffer and J. H. Kelly, Halifax, N.S.
125443	Empress of Port William (b) ..	Montreal .....	Wallsend, Eng....	1908	250 0	43 0	22 3	2,181	1,383	205 sc ..	Empress Transportation Co. of Midland, Ltd., Midland, Ont.
125428	Empress of Midland .....	" .....	" .....	1907	252 0	42 5	23 2	2,224	1,630	200 sc ..	Inland Lines, Ltd., Hamilton, Ont.
134512	Jas. H. Shrigley ..	Sarnia, Ont. ....	Milwaukee, Wis....	1881	171 0	31 2	11 5	534	400	65 sc ..	W. C. Thompson, Port Arthur, Ont.
137069	Katherine K. ....	Montreal .....	Montreal .....	1915	58 4	18 4	5 9	58	23	6 sc ..	Quinlan & Robertson, Montreal
134206	Prince Edward ..	Charlottetown, P.E.I.	Walker-on-Tyne, Eng.	1915	285 3	52 2	21 3	2,795	1,110	520 sc ..	Minister of Railways and Canals, Ottawa, Ont.
94921	Robert McDonald (c) ..	Kingston, Ont. ....	Pictou, Ont. ....	1890	91 0	19 0	6 4	97	50	18 sc ..	A. Sudds, M.O., Kingston, Ont.
134917	St. Ignace .....	Port Arthur, Ont..	Detroit, Mich. ....	1889	220 0	52 3	19 0	1,476	935	218 sc ..	J. Whalen, Port Arthur, Ont.
134543	W. H. Lee .....	Ottawa .....	U.S. ....	1889	128 9	30 0	11 0	317	190	61 sc ..	Minister of Naval Service, Ottawa, Ont.
(a) Formerly Orizaba.		(b) Formerly Mount Stephen.		(c) A received wreck							

(a) Formerly Orizaba.

(b) Formerly Mount Stephen.

(c) A recovered wreck

## List of Sailing Vessels and Barges Registered in Canada During August, 1915.

No.	Name	Port of Registry	Rig	Where and When Built	Length	Breadth	Depth	Reg. Tons	Owner or Managing Owner
137965	B. L. Pennington ..	Montreal .....	Sloop .....	West Bay City, Mich. 1888	239 8	38 3	14 3	1168	Canada Steamship Lines, Ltd., Montreal
137968	Brookdale (a) .....	" .....	" .....	Portmadoc, Scot.... 1902	213 1	39 0	16 3	1,105	" .....
109734	Callidora .....	Sydney, N.S. ....	Bktn .....	Sheboygan, Wis.... 1871	103 3	23 8	12 0	144	I. Rocks, Carleton Place, Ont.
137594	City of Sheboygan ..	Toronto .....	Schr. ....	Liverpool, N.S. .... 1915	135 5	27 4	10 0	297	E. M. Macdonald, Toronto
131208	Gilbert Islands .....	Liverpool, N.S. ....	Schr. ....	Buffalo, N.Y. ....	110 8	30 9	11 6	245	A. W. Hendry, Liverpool, N.S.
137967	Manley & Co., No. 1 (b) ..	Montreal .....	Dredge .....	" .....	75 4	26 3	5 0	118	M. McLaughlin, J.O., Welland, Ont.
137876	Olive E. ....	Lunenburg, N.S. ....	Schr. ....	La Have, N.S. .... 1911	30 8	10 7	6 2	11	A. Naugler, Dayspring, N.S.

(a) Formerly Moravia.

(b) Formerly Dredge No. 4.



with this decision, it is also stated that the vessel has not proved the profitable carrier that was expected. The experienced ship owners of Great Britain and Germany, who doubtless understand the ocean transportation business better than the business men of any other nation, continue to build freight vessels of moderate size in order to earn profits. It is only on the route between New York and Europe, where high class passenger traffic is under competition, that vessels larger than 20,000 tons have ever been put in profitable service, and very few ships operated on any other route exceed 10,000 tons.—Engineering News.

#### Telegraph, Telephone and Cable Matters.

The Bell Telephone Co. of Canada has 123 of its employees enlisted for active service, the majority of whom are already in continental Europe.

W. E. Bell has been appointed acting chief assistant to the Manager of Telegraphs, G. T. R. and G. T. P. R., Montreal, during the absence on leave of A. P. Linnell, who has enlisted for active service in Europe.

#### Among the Express Companies.

A. W. Martin has been appointed agent, Canadian Northern Ex. Co., Port Arthur, Ont., vice J. W. McDonald, deceased.

W. F. Pillar, agent, Canadian Northern Ex. Co., Edmonton, Alta., who has been on leave of absence for five months, has resumed his duties.

The Dominion Ex. Co. has opened offices at Breckenridge, Que., Castleton, Ont., and Coalmont and Renata, B. C., and has closed its offices at Glanworth and Port Stanley, Ont., and Port Simpson, B. C.

A press report states that the European representative of an American express company is in Petrograd, Russia, investigating the advisability of establishing an office there, with agencies in other parts of the country.

E. J. Wearing, Passenger Agent, G.T.R., Liverpool, England, has also been appointed acting General Agent, Canadian Ex. Co., there, succeeding W. Cuthbertson, General Agent, deceased, and has not been appointed General Assistant, as stated in our last issue.

The Canadian Ex. Co. has opened offices at Coldbrook, Kingsclear, Pokiok and Temple, N. B., Pictou Landing, N. S., St. Perpetue, Bridge, Hervey Jct., La Chat, La

Tuque, Monk, Rosaire, St. Adelpha, St. Malachie and St. Marc, Que., and Smithfield, Ont.

Canadian Ex. Co.'s statistics of operation for April show the following details:—Mileage of all lines covered, 9,676.50; charges for transportation, \$262,250; express privileges, \$123,579; operation other than transportation, \$5,559; total operating revenue, \$144,230; operating expenses, \$121,914; net operating revenue, \$22,315; express taxes, \$4,000; operating income, \$18,304.

#### Transportation Conventions in 1915-16.

Oct. 4, 5.—American Association of Traveling Passenger Agents, Boston, Mass.

Oct. 4-8.—American Electric Railway Association, San Francisco, Cal.

Oct. 5-7.—Railway Fire Protection Association, Chicago, Ill.

Oct. 10.—National Association of Railway Commissioners, San Francisco, Cal.

Oct. 13.—Association of Water Line Accounting Officers, Washington, D.C.

Oct. 13.—Railway Taxmen's Association, Chicago, Ill.

Oct. 13-15.—American Association of Railway Surgeons, Chicago, Ill.

Oct. 19-21.—Maintenance of Way and Master Painters' Association of the United States and Canada, St. Louis, Mo.

Oct. 19-21.—American Railway Bridge and Building Association, Detroit, Mich.

Oct. 19-21.—Society of Railway Financial Officers, Colorado Springs, Col.

Oct. 21-23.—American Association of Dining Car Superintendents, Boston, Mass.

Nov. 17.—American Railway Association, Chicago, Ill.

Nov. 17-19.—International Association of Ticket Agents, New Orleans, La.

Dec. 7-10.—American Society of Mechanical Engineers, New York, N.Y.

Dec. 14.—Association of Transportation and Car Accounting Officers, St. Louis, Mo.

Jan. 18-20, 1916.—American Wood Preservers' Association, Chicago, Ill.

March 21-23, 1916.—American Railway Engineering Association, Atlantic City, N.J.

May 2-5, 1916.—Air Brake Association, Atlanta, Ga.

June 28, 1916.—Association of American Railway Accounting Officers, Detroit, Mich.

#### Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:

Canadian Car Service Bureau—J. Reilly, Manager, 401 St. Nicholas Building, Montreal.

Canadian Electric Railway Association—Acton Burrows, 70 Bond Street, Toronto.

Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadian Express Building, Montreal.

Canadian Freight Association (Western lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.

Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday each month, 8.30 p.m., except June, July, and August.

Canadian Society of Civil Engineers—C. H. McLeod, 176 Mansfield St., Montreal.

Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.

Central Railway and Engineering Club of Canada—C. L. Worth, 409 Union Station, Toronto. Meetings at Toronto, 3rd Tuesday each month, except June, July, and August.

Dominion Marine Association—F. King, Counsel, Kingston, Ont.

Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.

Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.

Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.

Express Traffic Association of Canada—W. H. Burr, Chairman, Toronto.

Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.

Hydro-Electric Railway Association of Ontario, T. J. Hannigan, Guelph, Ont.

International Water Lines Passenger Association—M. R. Nelson, New York.

Niagara Frontier Summer Rate Committee—James Morrison, Montreal.

Nova Scotia Society of Engineers—A. R. McCleave, Halifax, N.S.

Quebec Transportation Club—A. F. Dion, Quebec.

Ship Masters' Association of Canada—Capt. E. Wells, 45 St. John Street, Halifax, N.S.

Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.

Western Canada Railway Club—Louis Kon, Box 1707, Winnipeg. Meetings at Winnipeg, 2nd Monday each month, except June, July, and August.

#### Tonnage on Welland and Panama Canals.

A comparison of the tonnage and number of vessel passages on the Welland and Panama Canals, for a six months period, shows the following.—Welland Canal, 3,314 vessel passages; 3,484,327 total tonnage; Panama Canal, 496 vessel passages; 2,367,244 total tonnage. The average tonnage per vessel passage through the Welland Canal is 1,050, while that through the Panama Canal, is 4,770. On the completion of the Welland Ship Canal, vessels of a considerably larger type than can be used at present will be able to pass, of course with correspondingly larger cargoes, so that though a decrease in the number of vessel passages may be looked for, the average tonnage will doubtless be considerably increased.

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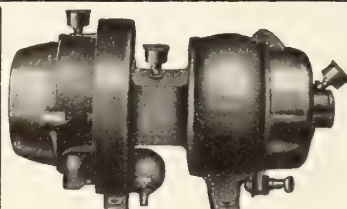
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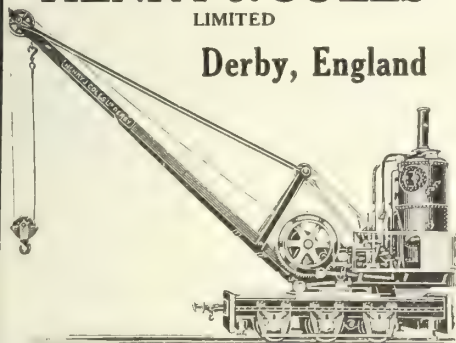
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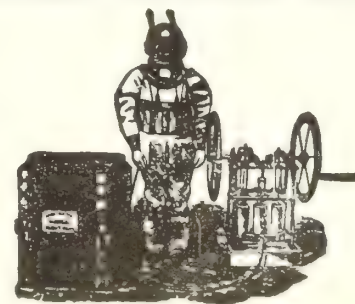
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17	\$ 2800.00	\$2800.00		\$8000.00		
20	3285.00	2800.00	\$ 485.00	8000.00	16.5 years	\$12125.00
25	4105.00	2800.00	1305.00	8000.00	6.13 "	32625.00
30	4930.00	2800.00	2130.00	8000.00	3.8 "	53250.00
40	6570.00	2800.00	3770.00	8000.00	2.12 "	94250.00
50	8210.00	2800.00	5410.00	8000.00	1.48 "	135250.00
60	9855.00	2800.00	7055.00	8000.00	1.13 "	176375.00
70	11495.00	2800.00	8695.00	8000.00	11 mos.	217375.00
80	13140.00	2800.00	10340.00	8000.00	9.3 "	258500.00
90	14790.00	2800.00	11980.00	8000.00	8 "	299500.00
100	16425.00	2800.00	13625.00	8000.00	7 "	340625.00

The above figures are conservative and are taken from a reliable source (See R. S. A. Journal Vol. 1, page 286.) When you can effect a yearly saving by installing G. R. S. Mechanical Interlocking and at the same time reduce your crossing delays, add signal protection to your traffic movements — when you can do all this at a saving of

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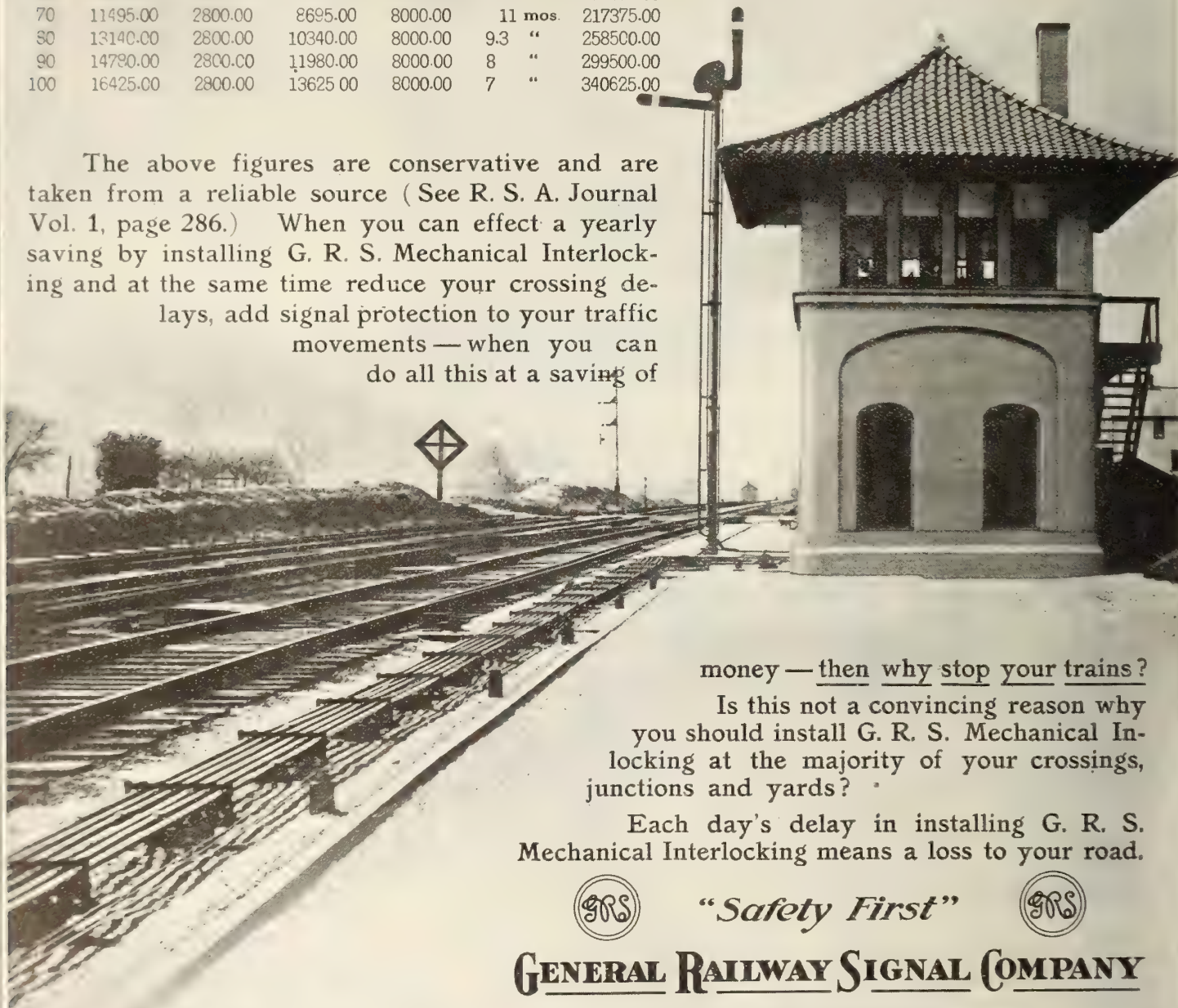
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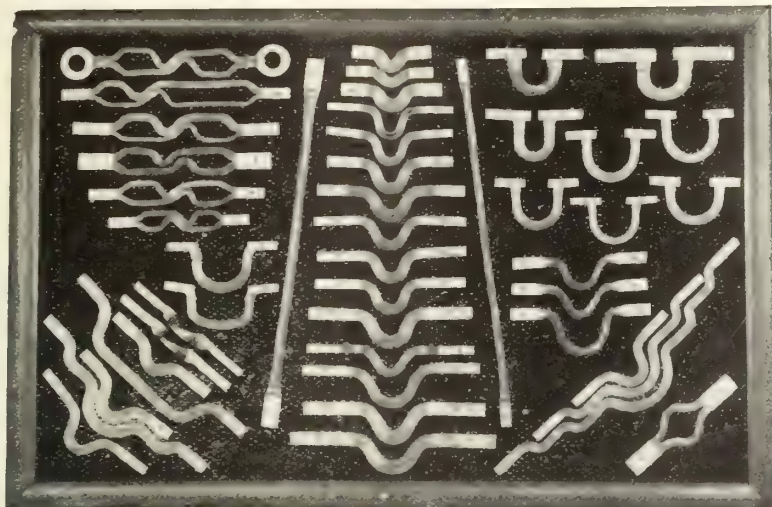
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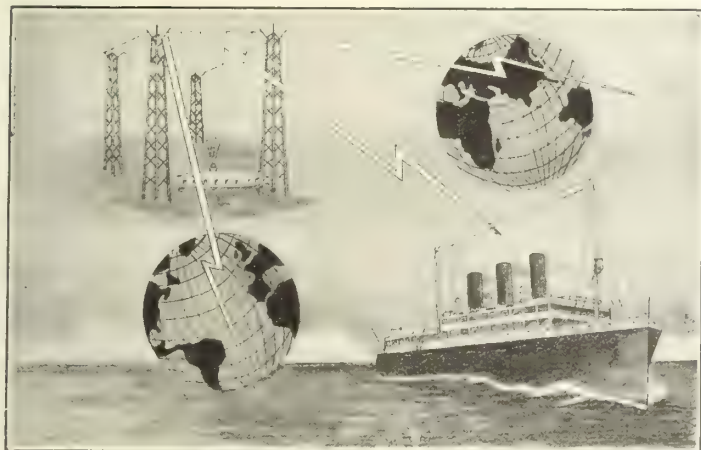
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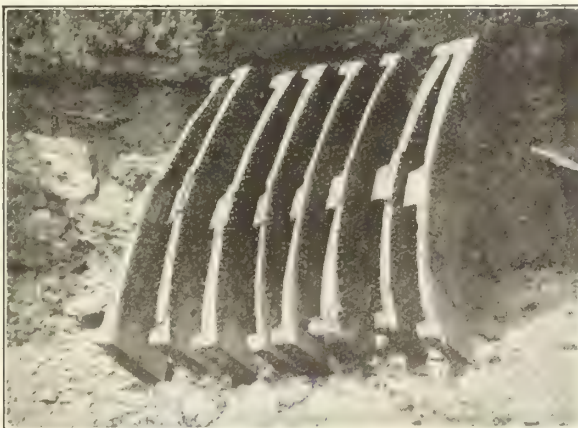
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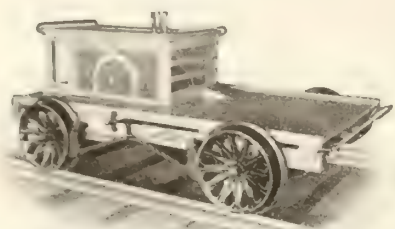
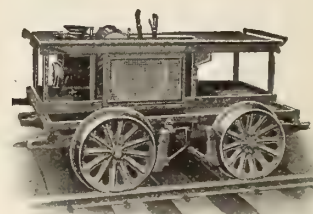
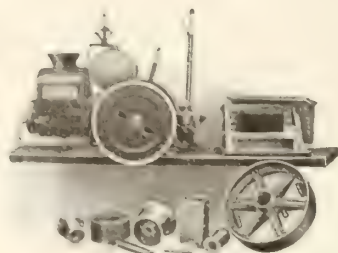
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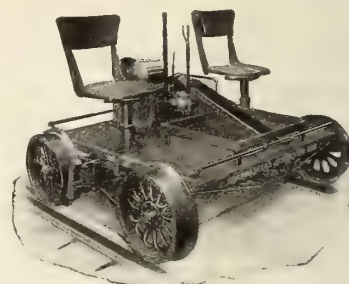
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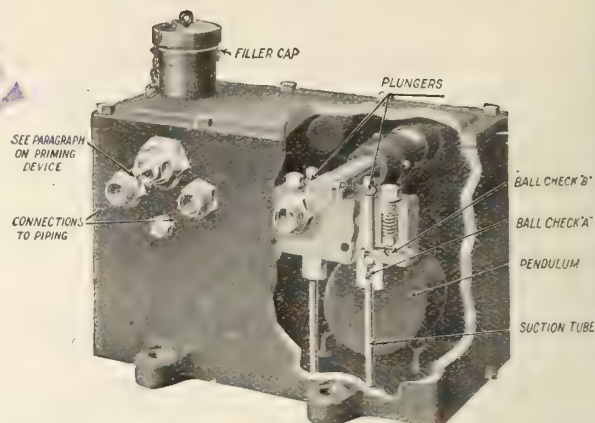
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Steel Co. of Canada

**WIRE GOODS, BRIGHT**  
Steel Co. of Canada

**WIRE, TELEGRAPH AND TELEPHONE**  
Northern Electric Co.  
Standard Und. Cable Co. of Can.  
Steel Co. of Canada

**WIRE, TRANSMISSION AND TROLLEY**  
Northern Electric Co.  
Standard Und. Cable Co. of Can.

**WRENCHES, CAST STEEL**  
Amer. Brake Shoe & Fdry. Co.

**YACHTS**  
Polson Iron Works.

J. S. COFFIN, President    SAMUEL G. ALLEN, 1st Vice-President    W. H. COYLE, 2nd Vice-President    C. L. WINEY, Sec. and Treas.

## FRANKLIN RAILWAY SUPPLY COMPANY

Specialists in Devices that Make for Economy

Chicago Office:  
332 S. Michigan Avenue

Main Office:  
30 Church Street, New York

San Francisco Office:  
795 Monadnock Bldg.

C. W. Sherman, Pres. and Gen. Mgr.

F. W. Baillie, Vice-Pres.

J. E. Hammond, Secy.-Treas.

# Dominion Steel Foundry Company, Limited, Hamilton, Ont.

Locomotive Frames

Car Bolsters

Car Castings

Heavy Machinery Castings



# Alphabetical List of Advertisers

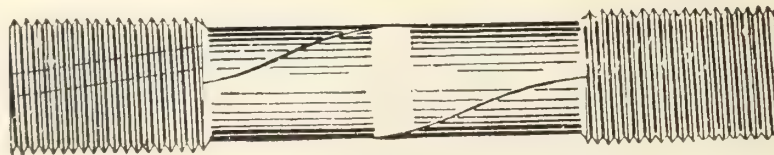
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\*Advertisements marked with an asterisk appear in alternate issues.

\*Advertisements marked with an asterisk appear in alternate issues.

## American Flexible Staybolts

Manufactured in Montreal



Made of the best standard staybolt iron, adding flexibility by process of making as shown above—closely approximating a rope structure.

Write for booklet on subject.

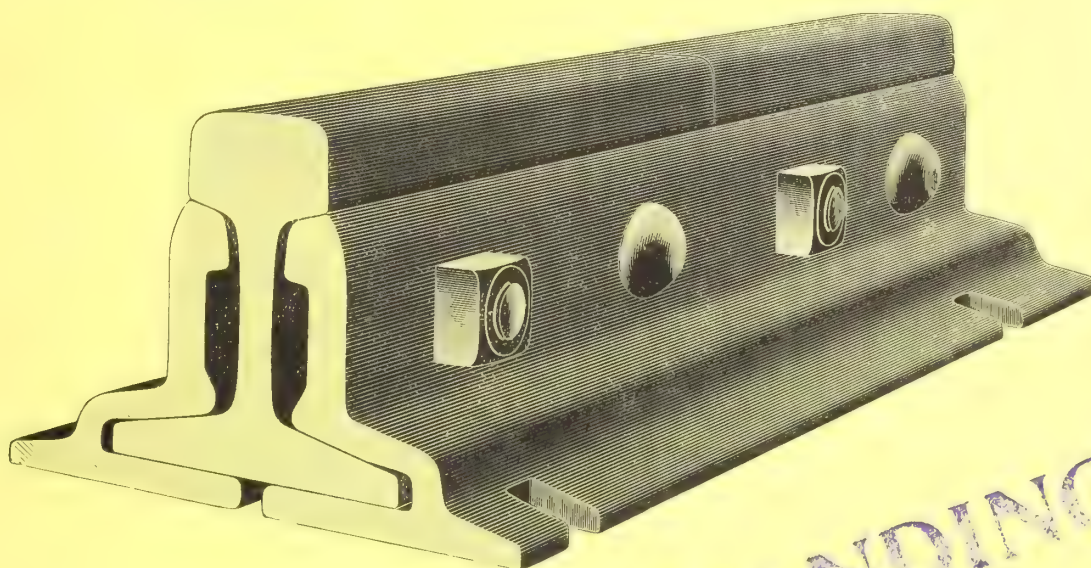
**TAYLOR & ARNOLD, Limited**  
MONTREAL WINNIPEG



# The Rail Joint Company of Canada Limited

606 McGill Building,  
MONTREAL, P.Q., CANADA

Makers of Base-Supported and One Hundred Per Cent. Rail Joints for Standard, Girder, and Special Rail Sections. Also Joints for Frogs and Switches; Insulated Rail Joints, and Step or Compromise Rail Joints. Patented in Canada and the United States.



CONTINUOUS RAIL JOINT

## THIS COMPANY'S PRODUCT

Is an acknowledged standard, not in an experimental stage; HIGH CARBON STEEL of the best quality used exclusively; Hot-Worked; Oil-Quenched when desired.

See our exhibit at the Panama-Pacific International Exposition, Palace of Transportation, Block 1, East End.

CATALOGUE AND FULL INFORMATION FURNISHED AT ALL SELLING AGENCIES.

Boston, Mass., India Bldg.; Chicago, Ill., Railway Exchange Bldg.; Denver, Colo., Equitable Bldg.; New York City, N.Y., 185 Madison Avenue; Philadelphia, Pa., Pennsylvania Bldg.; Pittsburg, Pa., Oliver Bldg.; Portland, Ore., Wilcox Bldg.; St. Louis, Mo., Commonwealth Trust Bldg.; Troy, N.Y., Burden Avenue.

London, E.C., Eng. . . . . 36 New Broad St.





# BERTRAM MACHINE TOOLS



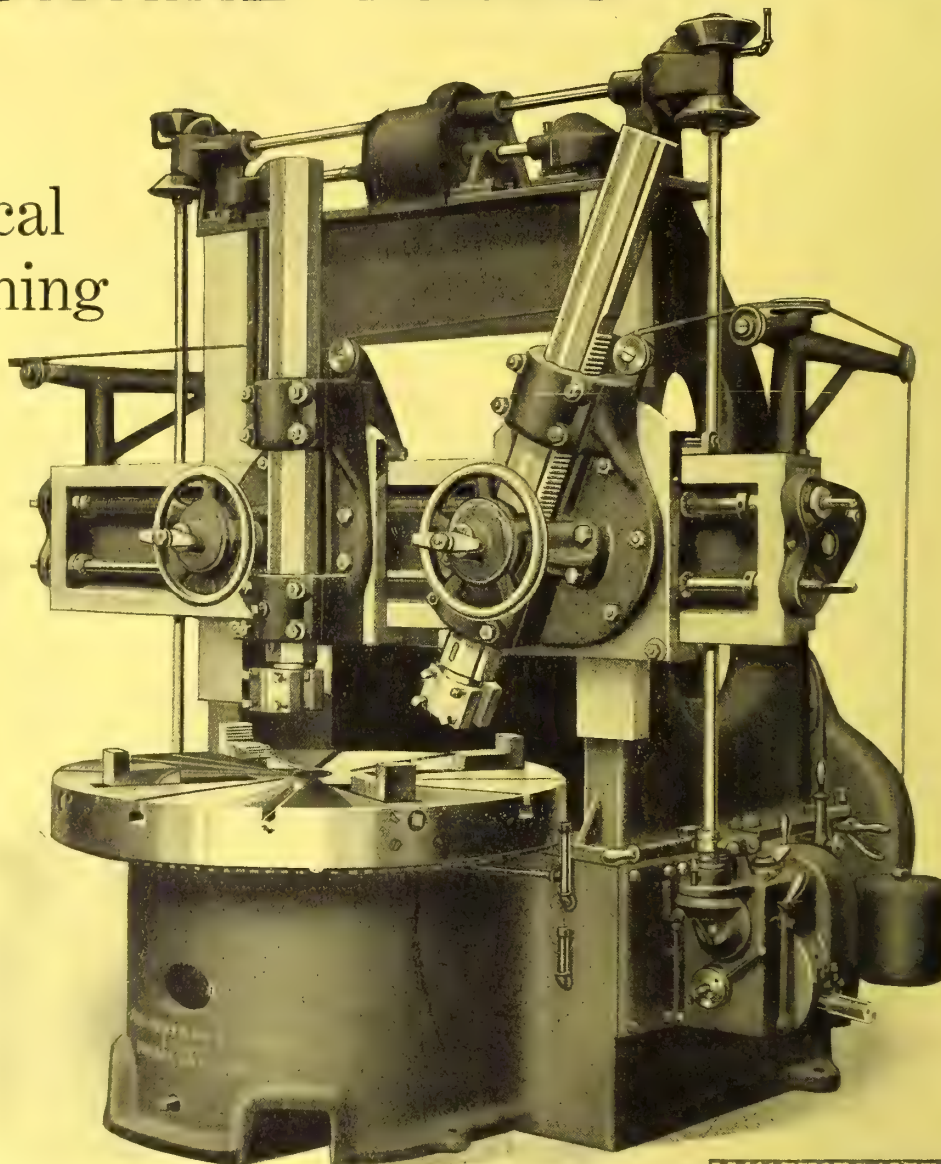
## 42-inch Vertical Boring and Turning Mill

(NILES TYPE)

Motor Driven Through  
Speed Box.

Built in Sizes From  
42-inch to 100-inch  
Swing.

*Drop us a line for  
photographs and full  
particulars.*



M 111 PHOTO 1057

## The John Bertram & Sons Co., Limited

DUNDAS, ONTARIO, CANADA

MONTREAL  
723 Drummond Bldg.

VANCOUVER  
609 Bank of Ottawa Bldg.

WINNIPEG  
Bank of Hamilton Bldg.



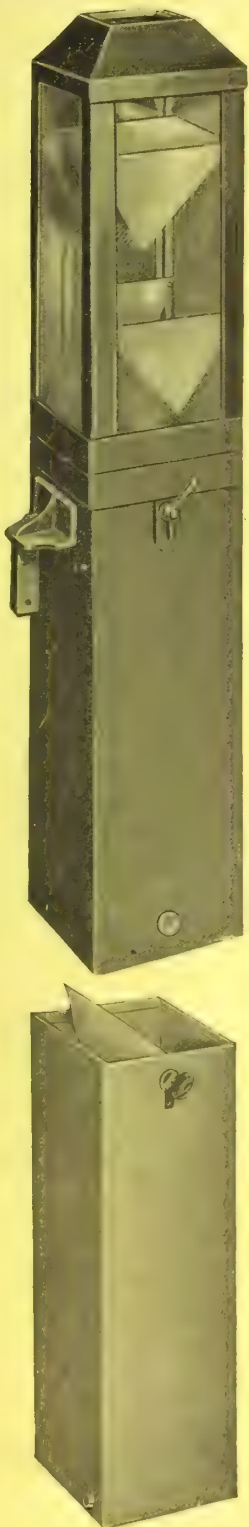
# Canadian Railway AND Marine World

ESTABLISHED 1898.

Number 213

TORONTO, CANADA, NOVEMBER, 1915

Subscription Rates, Page 433



## No. 4 Type Coleman Fare Box

Our new number 4 type stationary fare box will appeal to electric railway officials for all P. A. Y. E. operating conditions.

Being but five inches square it occupies a minimum amount of space on the car platform and is especially suitable where platform space is limited and also for one man operation.

It is suspended by two brackets to the car railing and the cash box telescopes into the outside casing.

There is only one working part to the box so that there is nothing to get out of order and this feature also insures low maintenance.

Should a glass become broken or should it be desired to clean the glasses this can be accomplished in a few minutes by a very simple means.

When you are considering purchasing fare boxes investigate this number 4 fare box carefully, it will save you money both in first cost and subsequent maintenance.

## Coleman Fare Box Co., Ltd.

*Manufacturers of Portable and Stationary Fare Boxes*

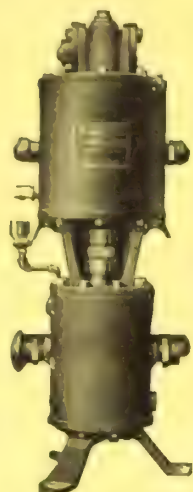
**Works:**  
Tottenham, Ont.

**Head Office:**  
70 Bond St., Toronto



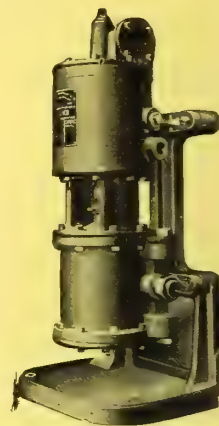
It is easy to have a simple and reliable air-compressing plant by installing —

## Westinghouse Steam-Driven Compressors



Portable Compressor  
for High Delivery Air  
Pressure.

THEY occupy the smallest possible space, yet are designed with ample proportion of all wearing parts, insuring durability and low maintenance cost. Any substantial floor is a sufficient foundation for installing these compressors. They can be mounted direct on a boiler, or to any post, column or wall, or a stand is provided making it easy to move the compressor about. A sufficient guarantee of their absolute reliability is the fact that they are the accepted standard for railway air brake systems.



Compressor on Stand.

**Canadian Westinghouse Company, Limited, Hamilton, Ontario**

TORONTO MONTREAL OTTAWA HALIFAX FT. WILLIAM WINNIPEG CALGARY EDMONTON VANCOUVER  
Traders Bank Bldg. 52 Victoria Square Ahearn & Soper, Ltd. Telephone Bldg. Telfer Bldg. 158 Portage Ave. E. Grain Exchange Bldg. Dominion Bldg. Bank of Ottawa Bldg.

# GENERAL SERVICE CARS

## OTIS DUMP CARS

— PATENTED —

—PAMPHLET No. 16 TELLS ABOUT THEM—

Always Ready For  
Use

One Man Operation

Simplest, Safest and  
Best Door Operating  
Gear

Largest Unobstructed  
Door Opening

Dumps Clear of the  
Rail



THE STANDARD COAL CAR ON CANADA'S LEADING RAILROADS.

Built in Any Size  
or Capacity

All Steel, Wood or  
Composite

For Standard or  
Special Service

Thousands in Use

THE MOST PRACTICAL CAR FOR ALL BULK FREIGHT.  
A DUMPING GONDOLA FOR ALL SERVICES.

DESIGNED AND BUILT BY

**THE HART-OTIS CAR CO., LIMITED : MONTREAL**

—SOLE PATENTEES FOR GENERAL SERVICE CARS FOR CANADA—



# Galena-Signal Oil Company

Works

**Franklin, Pa., and Toronto, Ont.**

Canadian Sales Office—603 Shaughnessy Bldg., Montreal, Que.

Sole manufacturers of the celebrated GALENA COACH, ENGINE and CAR OILS, and SIBLEY'S PERFECTION VALVE and SIGNAL OILS.

GUARANTEE COST per thousand miles for from one to five years, when conditions warrant it.

Maintain EXPERT DEPARTMENT, which is an organization of skilled railway mechanics of wide and varied experience. Services of Experts furnished free of charge to patrons interested in the economical use of oils.

## STREET RAILWAY LUBRICATION A SPECIALTY

---

USE

## Galena Railway Safety Oil

in Headlights, Marker and Classification Lamps, to secure Efficiency of Service, Maximum Candle Power, Clearness of Light.

## Galena Long Time Burner Oil

for use in Switch and Semaphore Lamps, and all lamps for long time burning, to avoid smoked and cracked chimneys and crusted wicks.

Tests and Correspondence Solicited.

**S. A. MEGEATH,**  
PRESIDENT.



# The Steel Company of Canada, Limited

## HAMILTON, CANADA

### Special Steel Marine Forgings

When forgings are required to stand the strain of rough weather, and to prove themselves reliable and dependable, write us for particulars and prices.

We have the facilities for the production of heavy steel forgings of all kinds, including:

Connecting Rods

Crank Shafts

Eccentric or  
Cam Forgings

Marine Engine  
Forgings

Piston Heads

Piston Rods

Shafting



**Stern Frame of Steamship Hamonic**

Rounds

Squares

Rudder Frames

Stern Frames

Side Rods

Steam Engine  
Forgings

#### *District Sales Offices:*

**HAMILTON**

**MONTREAL**

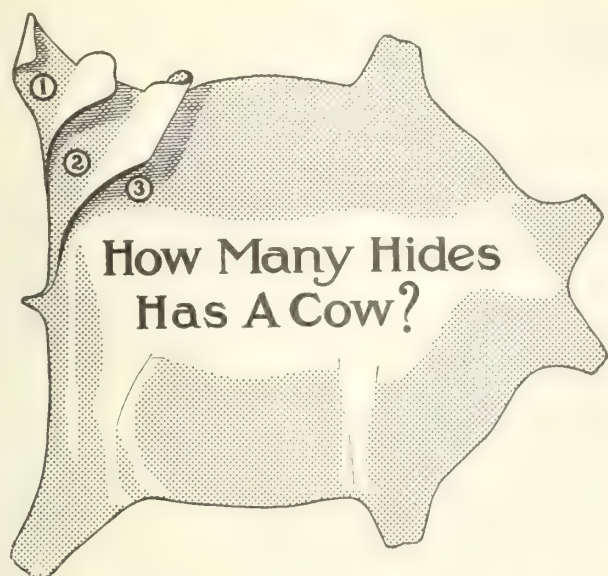
**TORONTO**

**WINNIPEG**

W. A. MacLennan, Vancouver, B.C.  
J. B. H. Rickaby, Victoria, B.C.

H. G. Rogers, St. John, N.B.  
Geo. D. Hatfield, Halifax, N.S.





## A Very Pertinent Question

To buyers of upholstery this IS a pertinent question; and it should call attention to a very important fact about upholstery material.

We all know that whole hides are too thick for upholstery purposes. The under, fleshy, spongy portion must be split away from the grain side to make the latter thin enough for use.

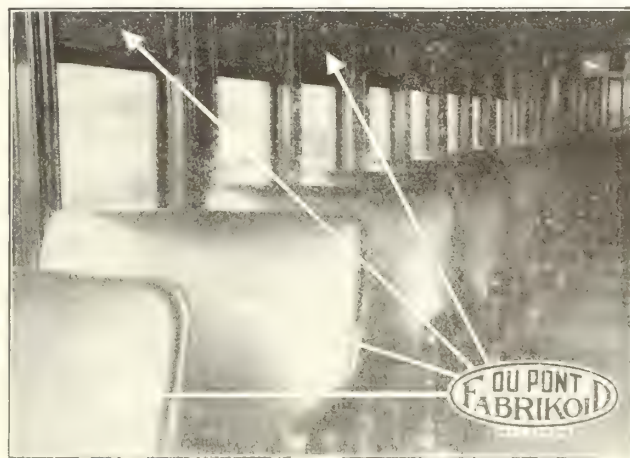
Now, the question is, why should the two or three sheets in which this wastage is split be called leather? The splits are artificially coated and embossed to look like natural grain leather. When it is new it often has the appearance of the genuine article—but as for wear and durability, it is an inferior substitute.



is an upholstery material of the leather type. It does not pretend to be natural grain leather as do the coated splits. FABRIKOID is marketed solely on its real merits—appearance, strength, wear and sanitary features.

FABRIKOID is guaranteed superior to coated splits. Its base is a strong, closely-woven, cotton fabric; the coating and grain-ing process is much the same as in the manufacture of splits—only the coating is much heavier.

The fabric base is a strong material that will not give nor stretch. That's why FABRIKOID doesn't crack and peel like ordinary leather. FABRIKOID is a superior product in every way—and it has all of the appearance of the finest grained leather.



A FABRIKOID product, coated on both sides, is made for car curtains. It is as ideal for that purpose as for upholstery.

Before specifying the finishings for those new cars, you should investigate DU PONT FABRIKOID. A comparison with the ordinary "genuine leather" upholstery material will be a veritable revelation—and maybe a disillusionment.

Let us prove to you that what we say about disillusionment.

*Full information about it and a sample will be sent upon request*

## Du Pont Fabrikoid Company

Du Pont Building, WILMINGTON, DELAWARE

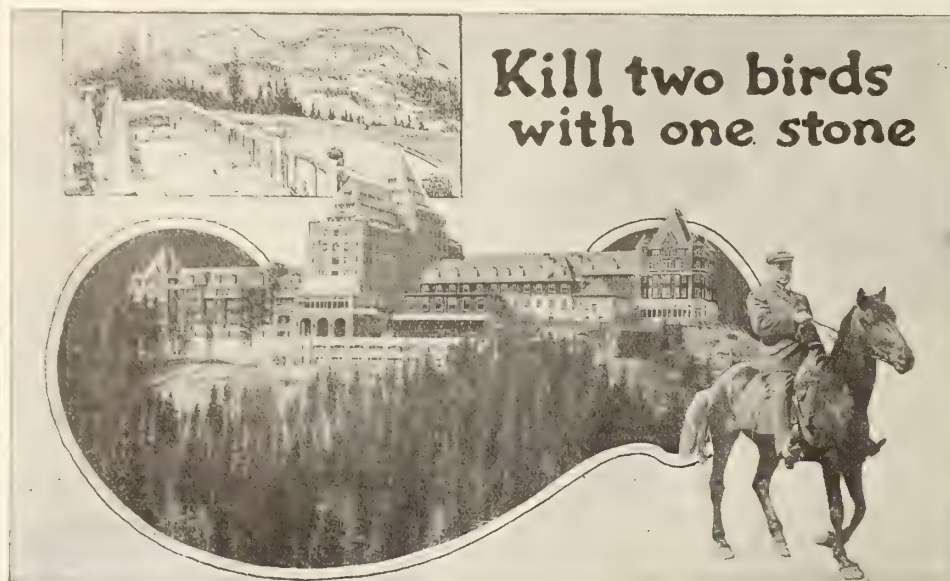
Canadian Office and Factory, TORONTO, CANADA

WENDELL & MACDUFFIE CO.

R. R. Department Representatives

63 Broadway, New York, N. Y.





and travel via THE  
**CANADIAN ROCKIES**  
to the  
**PANAMA PACIFIC EXPOSITION**

If you are planning your 1915 trip to San Francisco, make sure your ticket reads via Canadian Pacific, otherwise you will miss the grandeur beauty of nature's most stupendous works—The Canadian Rockies.

**BANFF      LAKE LOUISE      FIELD      GLACIER**

Are important tourist stop-over points on the Canadian Pacific Railway route to the Pacific Coast. These have excellent hotel accommodation, with opportunities for riding, climbing, swimming, boating and golf.

Agents will personally call on you to arrange your itinerary.

Write, phone or call on nearest C. P. R. Representative.

W. FULTON

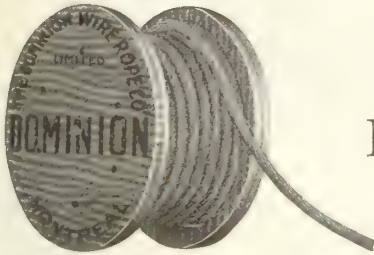
Asst. Dist. Passenger Agent  
Toronto.

M. G. MURPHY

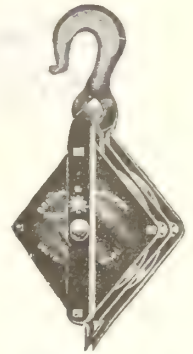
Dist. Passenger Agent  
Toronto.



# "DOMINION WIRE ROPE" PRODUCTS



Minimize Your Troubles by Buying Our  
**BLOCKS, CLIPS, THIMBLES**  
and **WIRE ROPE**



*We specialize in the manufacture of AMMUNITION BOX HANDLES*

**The DOMINION WIRE ROPE CO., LIMITED, MONTREAL**



When In Need of a  
**Rail Loader**

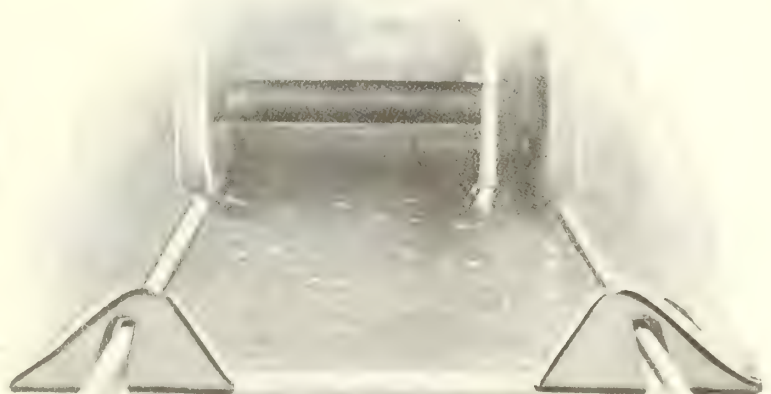
Let us quote you for one  
which has been  
adopted by

**The Largest Canadian  
and American Roads**

Adapted for handling rails. Nothing cheap about it except price.  
No skilled labor required. Cheaper to operate than a steam hoist.

## "JOHNSON" WRECKING FROGS

will replace wheels on both  
sides of the rail at one setting.  
Once placed in position will  
not move or turn over.



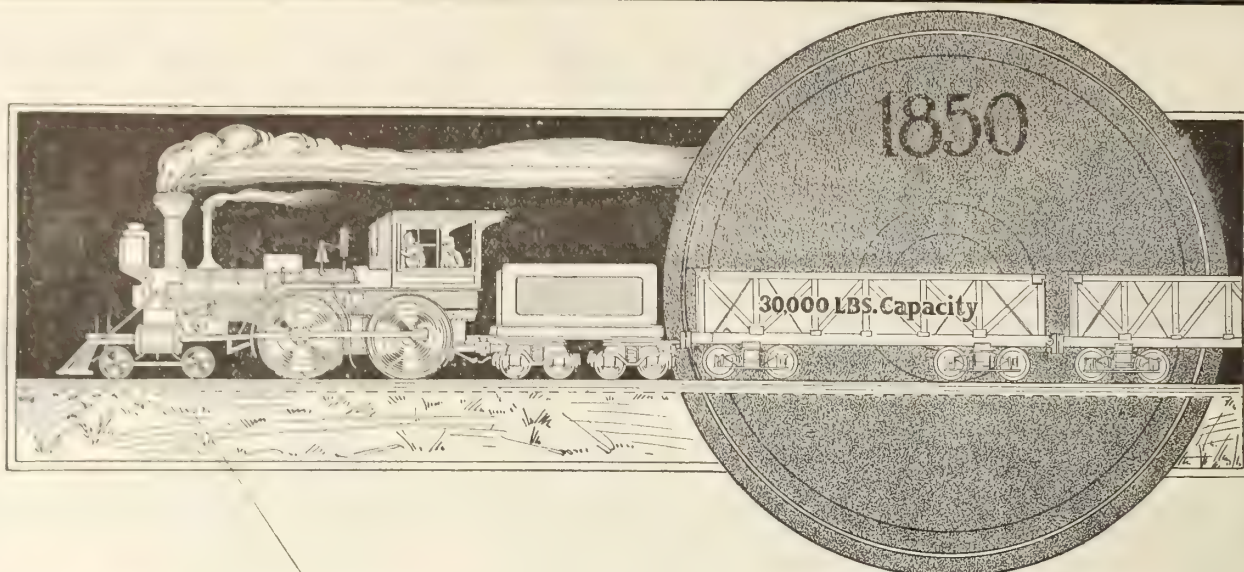
### BRANCHES

**ST. CATHARINES, ONT.**  
1206 Union Trust Bldg., Winnipeg, Man.  
**VANCOUVER, B.C.**

**F. H. Hopkins & Co**

HEAD OFFICE  
**MONTREAL**





## The Wonderful Single Service Chilled Iron Wheel

The Chilled Iron Wheel was Standard in the year of 1850.

The Chilled Iron Wheel is Standard To-day.

The Chilled Iron Wheel has been the Standard for rail borne traffic for 65 years.

This is because of certain inherent properties which are only to be found in chilled iron. The advantages of chilled iron wheels over other types are as follows:

First: The Chilled Iron Wheel has a hard tread or wearing surface which will carry the heaviest concentrated load without excessive deformation over irregular tracks at high speeds.

Second: Chilled Iron Wheels yield the maximum of service per unit of metal worn away.

Third: Chilled Iron Wheels have the greatest coefficient of friction when in contact with the brake shoe.

Fourth: The character of the tread surface is such that the life of the brake shoe is prolonged.

Fifth: Chilled Iron Wheels are least destructive to the rail and the intensity of internal stresses in the rail depend on the character of the metal in the wheel, which transmits the heavy concentrated loads through a small surface of metal.

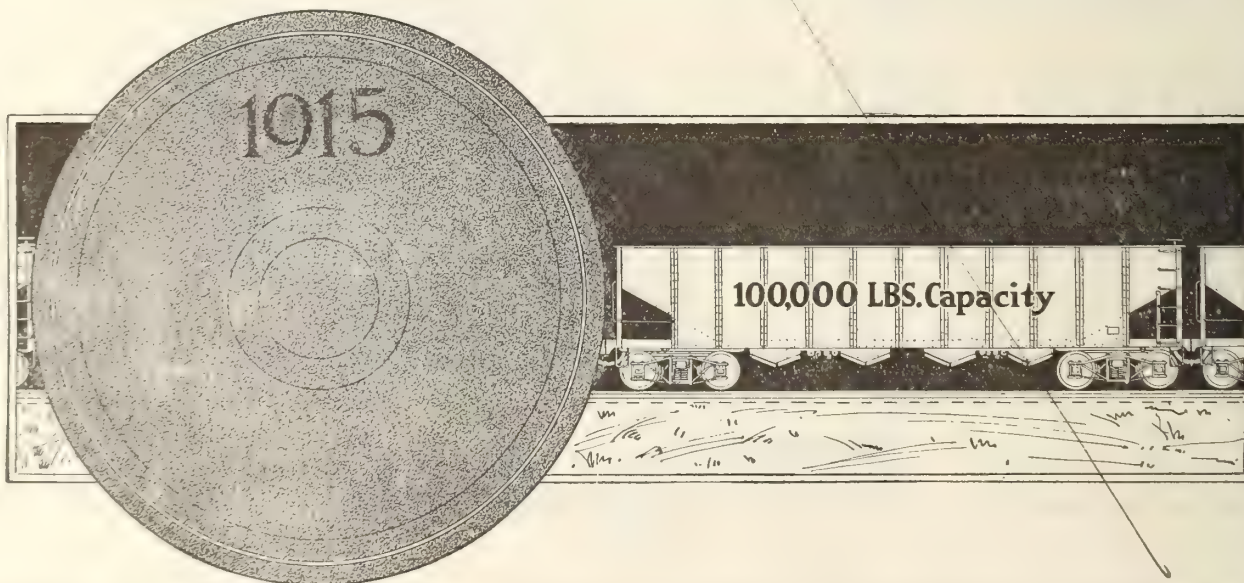
Sixth: Chilled Iron Wheels produce the least amount of rail abrasion.

THE WONDERFUL SINGLE SERVICE CHILLED IRON WHEEL—25,000,000 now running.

## Association of Manufacturers of Chilled Car Wheels

1214 McCormick Building, Chicago

Representing forty-eight wheel foundries located through the United States and Canada. Capacity 20,000 chilled iron wheels per day.







Photograph copyright, International News Service.

# WHY These Signal Failures ?



Photograph copyright by Brown & Dawson of Underwood & Underwood, New York.

When a signal fails to operate anything may happen. These photographs show what often does happen. But a signal failure is not always due to the signal—it may be in the wire, because that is the most vital part of any railway signalling system.

## *Northern Electric* "R. S. A." Wire

will meet every requirement. Its lasting qualities are the result of experience and skill acquired during many years' knowledge in the manufacture of the highest class wires and cables.

### *Northern Electric Company* LIMITED

Montreal  
Halifax  
Toronto

Winnipeg  
Regina  
Calgary

Edmonton  
Vancouver  
Victoria

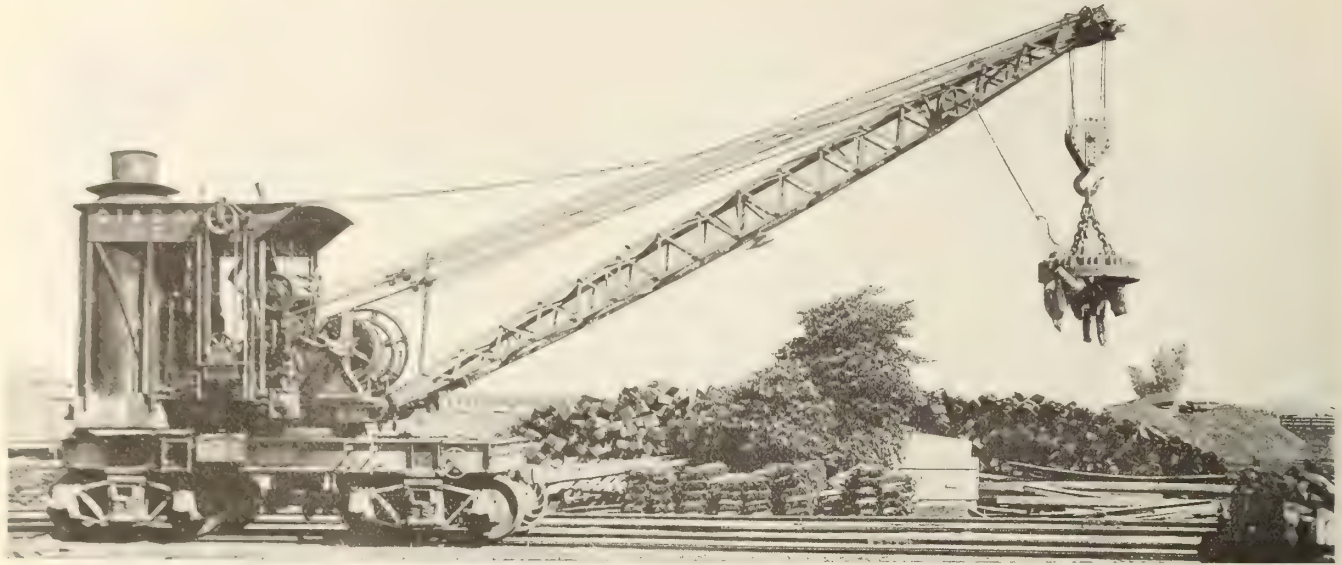


Photograph copyright, International News Service.



Photograph copyright, International News Service.





Why employ 20 to 40 men to handle your material? A

## BROWNHOIST Locomotive Crane

will do the same amount of work with a decided saving to you. Its cost, including 6% interest on investment, depreciation, and operating costs, is only \$6.00 to \$10.00 per day. It is one man operated, powerful, quick-acting, and built to withstand hard and continuous service. Records prove this.

**ADAPTABILITY.** The equipment is interchangeable. It only takes a short time to apply the Grab Bucket, Bottom Block, Drag-Line Bucket, Pile Driving Attachment, Lifting Magnet, or Shovel Equipment. This makes practically six machines in one.

**RAILROADS** all over the country are realizing more and more the advantage and economy of having a Brownhoist Locomotive Crane on the job, because it is always ready to work in case of emergency. A Brownhoist Crane can be relied upon. One road uses thirty of them.

INVESTIGATE TO-DAY. Catalogue I shows  
how and where some of these cranes are used.

***THE BROWN HOISTING MACHINERY CO.***  
**CLEVELAND, OHIO**

MONTREAL OFFICE, 145 St. James Street

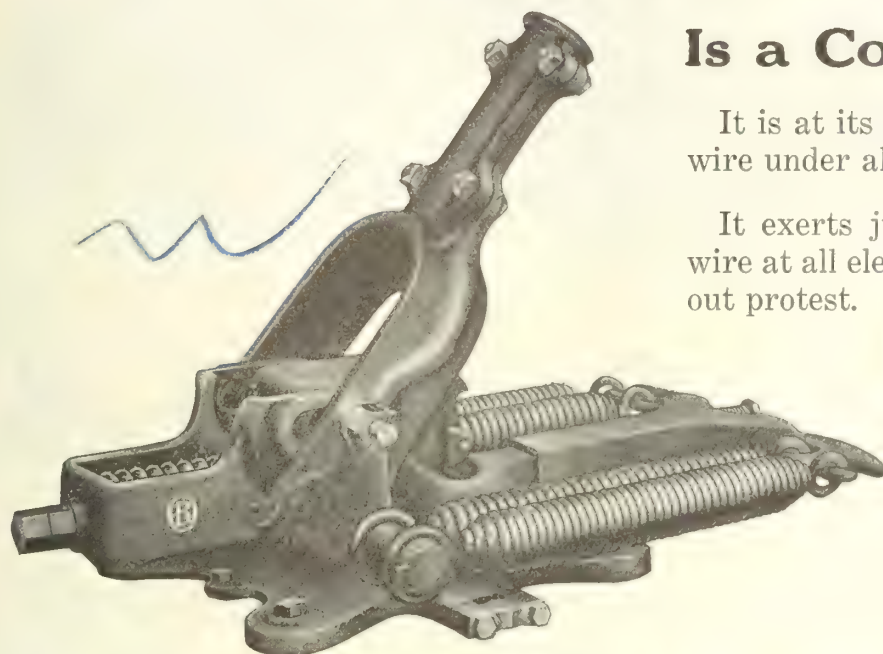


# The O-B Trolley Base

## Is a Consistent Worker

It is at its job of keeping the wheel on the wire under all conditions.

It exerts just the needed pressure on the wire at all elevations and follows curves without protest.

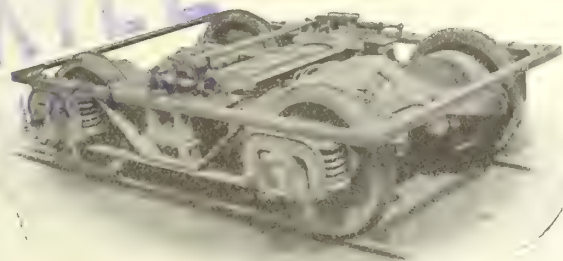


Another thing — O-B Bases are usually found on top of cars, instead of in repair shops.

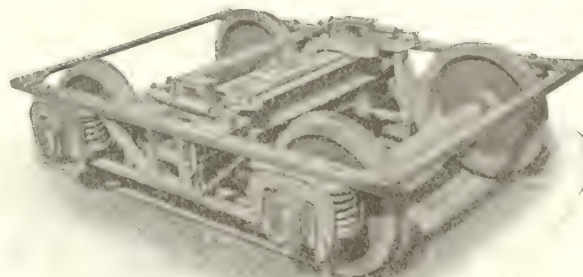
Page 508-512 give full details and listing. A free service demonstration will be made gladly.

**THE OHIO BRASS COMPANY, Mansfield, Ohio, U.S.A.**

## The "National" Truck for Interurban Service



WITH MOTORS.



WITHOUT MOTORS.

When we can say that we have never had a dissatisfied customer it means that the "NATIONAL" Truck has unusual merit. It solves the problem of minimum weight with maximum efficiency and smooth riding qualities.

"There are no rough spots on the road that uses the "NATIONAL" Truck.

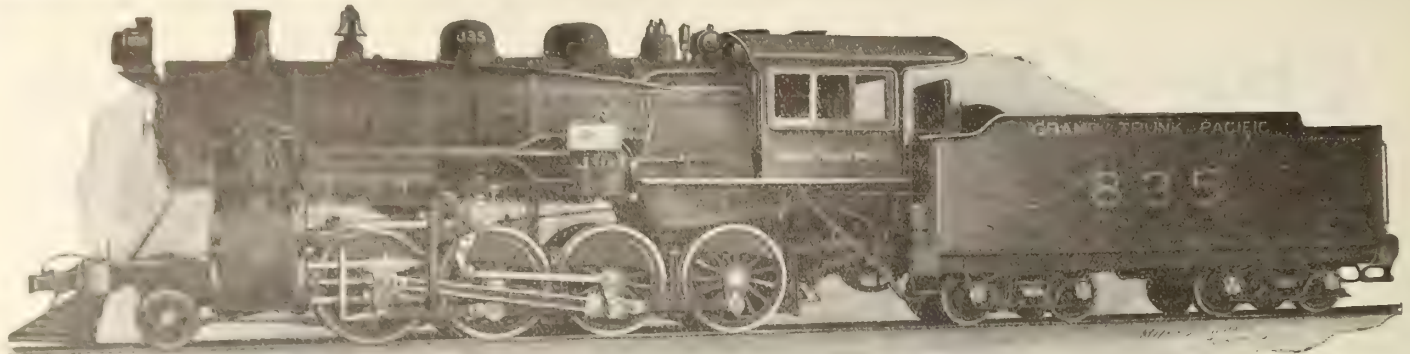
## National Steel Car Company, Limited

Montreal Office  
Shaughnessy Building

ADDRESS INQUIRIES TO HAMILTON

Works and Operating Offices  
Hamilton, Ontario





Consolidated Type Locomotive Built for Freight Service on the Grand Trunk Pacific Railway.

# LOCOMOTIVES

Long experience, new equipment, efficient management and expert workmen, are guarantees that our Locomotives will give record service. Over 1,200 Locomotives have been built at our Works since the erection of the plant. We are builders of Simple and Compound Locomotives adapted to every variety of service, for Railway Contractors, for Industrial Purposes, Mines, all classes of Railway Work, etc.

We are also builders of stationary boilers, suitable for contractors and industrial plants. Grey iron castings—any size or shape—ordinary or intricate—made promptly. New foundry, splendidly equipped. We would be pleased to quote on castings—singly or by contract. We also make drop forgings of all descriptions.

**CANADIAN LOCOMOTIVE CO., Limited, Kingston, Ontario**

## The No. 25 McLain Pressed Steel Headlight

is equipped with triple nickel-plated polished reflector of special parabolic design which centralizes the rays of a concentrated filament Mazda bulb perfectly focused, throwing a straight, strong beam of light down the track, far ahead of the car.

Extremely light—weighing three pounds less than any other Headlight.

No sacrifice has been made to attain this lightness of weight for the McLAIN No. 25 is as strong as any Headlight made, and has an illuminating power in excess of other Headlights employing an incandescent globe.

Has extended dash—Dust and waterproof.

Guaranteed to give good service.

Write for booklet and prices.

**The Trolley Supply Co.**  
Canton, Ohio





# Nova Scotia Steel and Coal Co., Limited

*Manufacturers of*

MARINE, RAILWAY AND GENERAL ENGINEERING FORGINGS OF ALL SHAPES AND UP TO 40 TONS IN WEIGHT, MADE FROM BEST ORDINARY OR HARMET FLUID COMPRESSED OPEN-HEARTH STEEL. OUR FORGE IS EQUIPPED WITH THE MOST MODERN STEAM HYDRAULIC PRESSES. *RAILWAY TRACK MATERIAL, fish plate, tie plate, track bolts, spikes, tee rails—12 to 40 lbs. per yard.*

ROLLED STEEL FOR CAR BUILDERS' USE: Spring, machinery, tire, angle, and merchant bar steel, bright compressed shafting, rivets, tank plate—12-gauge up to 1" and 50" wide cold twisted steel bars for reinforced concrete work.

ALSO MINERS AND SHIPPERS OF THE CELEBRATED "OLD SYDNEY" COAL.  
HIGH CALIFORIC VALUE—LOW ASH—UNEXCELLED FOR STEAM-RAISING PURPOSES.  
BEST HOUSE COAL MINED IN CANADA.

Collieries, Iron and Steel  
Furnaces:  
SYDNEY MINES, C. B.

Coal Shipping  
Piers:  
NORTH SYDNEY, C. B.

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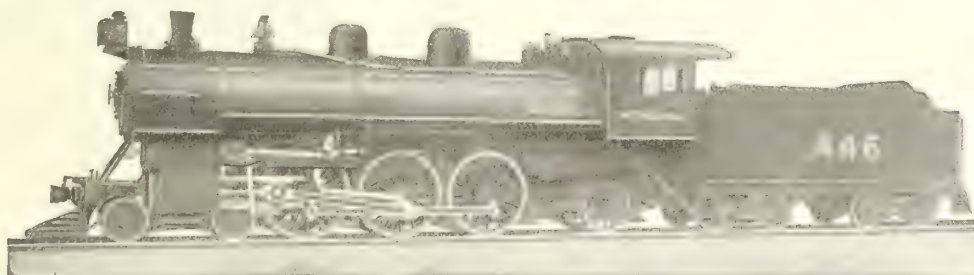
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Western Steel Sales Office  
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Head Office:  
**NEW GLASGOW, N.S.**

## Heavier Trains—Less Coal and Water Per Trip



PACIFIC TYPE LOCOMOTIVE — INTERCOLONIAL RAILWAY.

Total weight of engine, 243,500 pounds; weight on drivers, 154,000 pounds; diameter of drivers, 73 inches; boiler pressure, 180 pounds; cylinders, 23½ x 28 inches; maximum tractive power, 32,400 pounds.

On a 185 mile run at an average speed of 40 miles per hour, these new Pacific type locomotives handle 10 cars and consume 12,884 pounds of coal and 9,750 gallons of water per trip.

Pacific type locomotives built five years ago, handled 9 cars on this same run at the same speed, but consumed 17,620 pounds of coal and 14,250 gallons of water per trip.

This is a saving of 26.9 per cent. in coal and 31.6 per cent. in water, with one extra car.

**MONTREAL LOCOMOTIVE WORKS, LIMITED,**  
DOMINION EXPRESS BUILDING, MONTREAL, CANADA



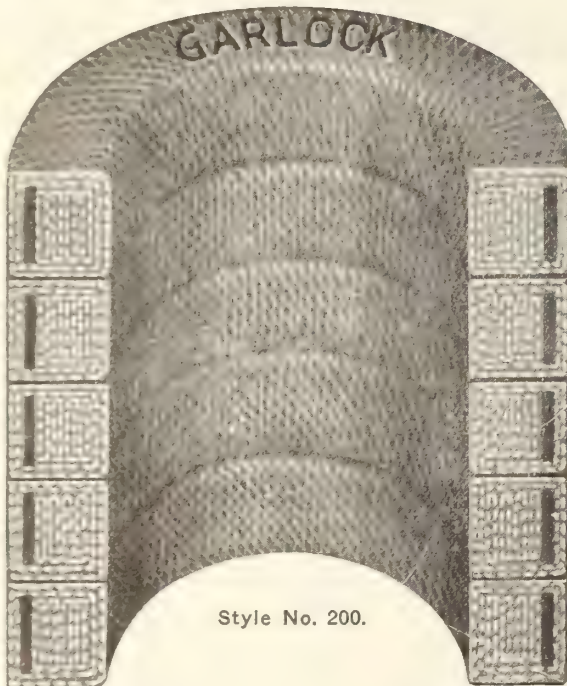


## Good Hunting

on Canadian Northern Railway  
Lines for Moose and Deer

North of Quebec, in Central Ontario and North of Parry Sound. Also along the south shore of Nova Scotia.

Further particulars are obtainable in our booklet, "Where to Fish and Hunt," or from the General Passenger Departments, 68 King Street East, Toronto, Ontario; 226 St. James Street, Montreal, Quebec; and 123 Hollis Street, Halifax, N.S.



Style No. 200.

## Garlock High Pressure Piston Rod Packing

Is built up in rectangular form and uniform shape and exact sizes are thereby obtained.

Asbestos packing, which is rolled around a rubber core and afterwards distorted by running through a square die, does not retain its shape or size.

The best materials we can buy are used in the manufacture of our high pressure packing.

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Our packings are sold at net weights; weights of tubes and boxes are not included.

Every pound of our high pressure packing carries with it the Garlock guarantee of satisfactory and economical service.

We will promptly replace or refund the cost of any of our packings which may prove unsatisfactory to our customers.

**THE GARLOCK PACKING COMPANY**

**Hamilton, Ontario**



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Enamelled iron signs are ideal for station name and station door signs.

They are much superior to a painted wooden sign, which has to be repainted at frequent intervals, and they last a lifetime.

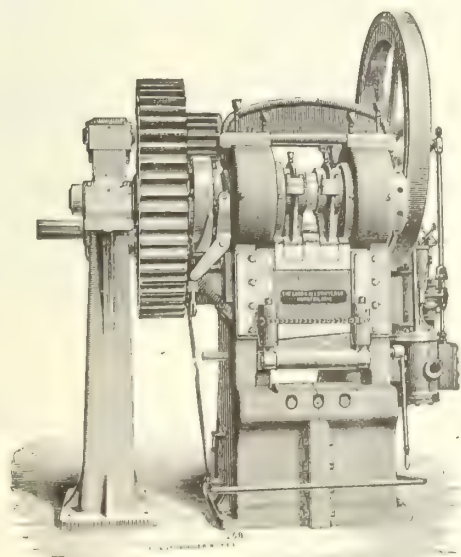
There is absolutely no wear to them, and we guarantee that they will not fade or be affected by the weather in any way.

We will be pleased to quote you prices on request.

## Acton Burrows Limited

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## POWER PUNCHING AND SHEARING MACHINERY



Gate Shear—Steam-Driven

Over 350 sizes and styles for all kinds of light and heavy work designed and manufactured by

### THE LONG & ALLSTATTER CO.

Hamilton, Ohio, U. S. A.

Riveting Machines

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Write for Catalogue if interested. Correspondence invited.



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When better files are possible they will still bear these famous names

KEARNEY & FOOT  
GREAT WESTERN  
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**MADE IN CANADA**

For 50 years we've made files only. To-day we make sixty million each year. From raw steel to finished file we supervise every step.

When any improvement is possible you'll find it first in the "Famous Five."

To cut filing cost—replace all half-worn files. At that point they lose efficiency. They require more time and more effort to remove less stock less accurately. You save money by using more files.

What you save in time, labor and money more than pays for the extra files.

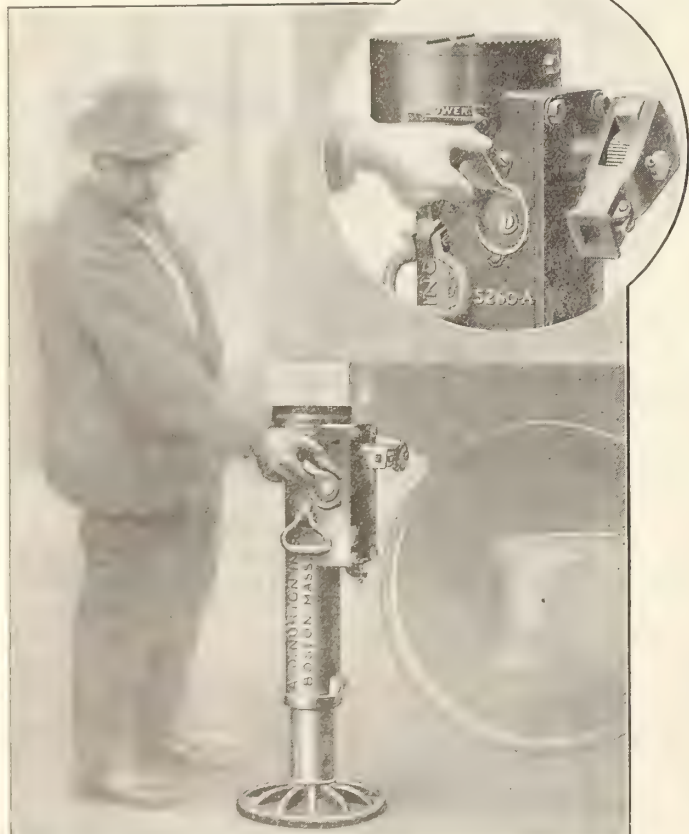
**NICHOLSON FILE COMPANY**

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"File Filosofy"—the first and only hand-book on files. Send for your free copy now.



## Don't Pump Your Jack Down

*Lower the Load by "Pressing the Button"*

## THE NORTON SELF LOWERING JACK

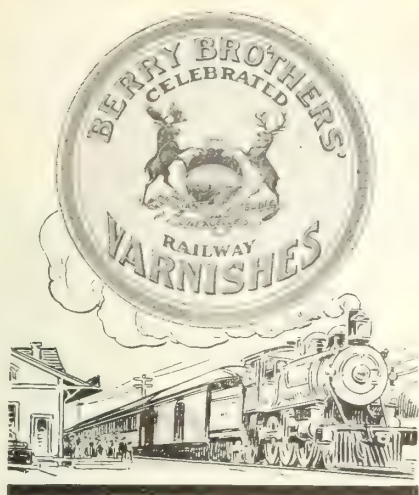
is absolutely Safe and will do your work **Quicker** and **Easier** than you have ever done it before.

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## Appearance is an Outward Sign of Prosperity

A farm, with rich soil, may have nothing but unpainted, rambling looking buildings. It brings a small price. A farm with poorer soil may have new buildings and everything looking UP-TO-DATE and bring a higher price. Looks please or displease—create prejudice for or against.

BERRY BROTHERS' RAILWAY and MARINE VARNISHES supply a means of continuing good appearance.

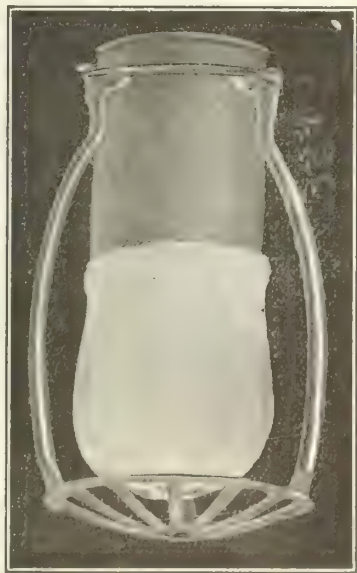
BERRY BROTHERS' VARNISHES have given over half a century's satisfaction to users. Their rich tone and wonderful wear resisting qualities have demonstrated their superiority wherever used.

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**World's Largest Varnish Makers**

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## Pintsch Mantle Light

No other system of car lighting gives clean, safe and efficient light without intricate mechanism, subject to defects and failures. Pintsch Mantle Light is the only absolutely dependable method of lighting railway cars.

**The Safety Car Heating and Lighting Company**

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718 TRANSPORTATION BUILDING, MONTREAL





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### The Chateau Laurier, Ottawa, Ont.

Accommodation 350 Rooms. Rates  
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G. T. BELL,  
Passenger Traffic Manager,  
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# Excellence in Railway Service

is expressed in what the

## Grand Trunk System

is offering the Travelling Public of Canada.

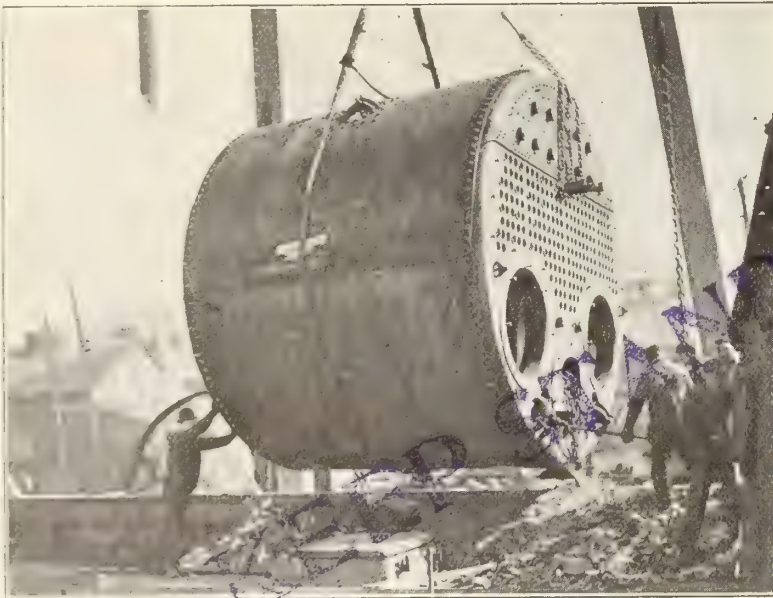
UNEXCELLED ROAD BED  
SUPERB DINING CAR SERVICE  
COURTEOUS ATTENTION  
MODERN EQUIPMENT

The Grand Trunk System reaches all trade centres in Eastern Canada, and is now a large factor in Western Canada traffic through the Grand Trunk Pacific Railway, recently completed to the Pacific coast.

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Canada's Train of superior service, leaves Montreal at 10.15 a.m. daily, arrives Toronto 5.45 p.m., London 8.53 p.m., Detroit 10.58 p.m., Chicago 8.00 a.m. Observation, Library, Compartment Cars. Modern in every detail. Electric lighted.

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Assistant Passenger Traffic Manager,  
Montreal, Que.



13 ft. x 11 ft. Clyde Boiler for Senator Derbyshire, weight 30 tons. Designed for a working pressure of 125 lbs., but allowed 131 lbs. by the Government Marine Inspector. This boiler has 212 tubes, including stay tubes 3½ inches diam. x 7 ft. 9 ins. long, three Morrison corrugated flanged furnaces of the "horse collar" withdrawal type, grates and smoke box. The steamer was laid under our shear leg at the close of navigation and the old boiler removed. Within 10 hours after the breaking up of the ice in our dock the new boiler was installed in the boat.

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Dredges, Hydraulic and Dipper  
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all Sizes*

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Works and Office, Esplanade East, Toronto



# 450 Railroad Shops in the United States and Canada Use Thermit



*Let us send you this pamphlet.*

This comprises practically all the shops of importance in North America, and it can be said without exaggeration that the list of railroads using Thermit includes practically every system from the small road having only three or four locomotives to the largest system in the world having many thousand locomotives.

If by any chance your shop is not using Thermit, you should investigate the process and see how effectively and economically it will handle the many repairs on locomotive frames and other sections.

Remember that the greatest railway systems in the world use hundreds of thousands of pounds of Thermit. They do not use it for any reason except that it "delivers the goods" and has proven itself a profitable investment.

Let us mail you our new pamphlet, No. 2144, which contains full information on Thermit in Railroad Shops.

All Thermit materials and appliances are manufactured in the United States and Canada

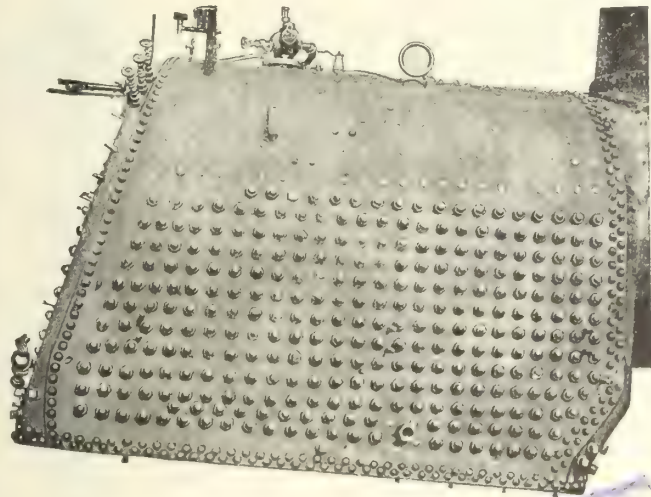
## Goldschmidt Thermit Company

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## The Perfect Stay

*For Locomotive Fire Boxes*

## Tate Flexible Staybolts

Are now in use on 425 Railroads of the United States as well as the main Railroad Systems of Canada.

RECOGNIZED AS THE MOST ECONOMIC FLEXIBLE STAYBOLT now in the market, because the Tate Bolt has demonstrated its true functions as a mechanical appliance to service fire box requirements.

MANY RAILROAD SYSTEMS have kept accurate service records and show remarkable increase in the earning power of the locomotives that have been equipped with complete installations of the Tate Flexible Staybolt.

**FLANNERY BOLT COMPANY, Vanadium Building, Pittsburgh, Pa.**

Manufactured and sold in Canada by Canadian Allis-Chalmers, Limited, General Offices, Toronto, Ont.





## Scientific Treatment of Boiler Waters

### Dearborn Service to Railroads

In these times when "Economy" is the slogan in every industry, and particularly in railroad operation, Dearborn Service should make a strong appeal to the Motive Power People.

In treating boiler waters by the Dearborn Method there is no outlay of capital required for installation of equipment, nor expense involved in putting the goods into use, while the cost of the treatment per thousand gallons of water is less than by any other method. We furnish expert testing engineers to advise as to the proper handling of the treatment to get the best results economically.

Scale formation, foaming, corrosion, and pitting are prevented, fuel and lubricating oil expense lessened, greater mileage between boiler washings made possible, as well as ability to haul greater tonnage, and the life of flues and fire boxes extended 50 to 200 per cent.

Most railways have had water supplies to contend with. We would like an opportunity to show you the efficiency of Dearborn Service in overcoming such difficulties on your line.

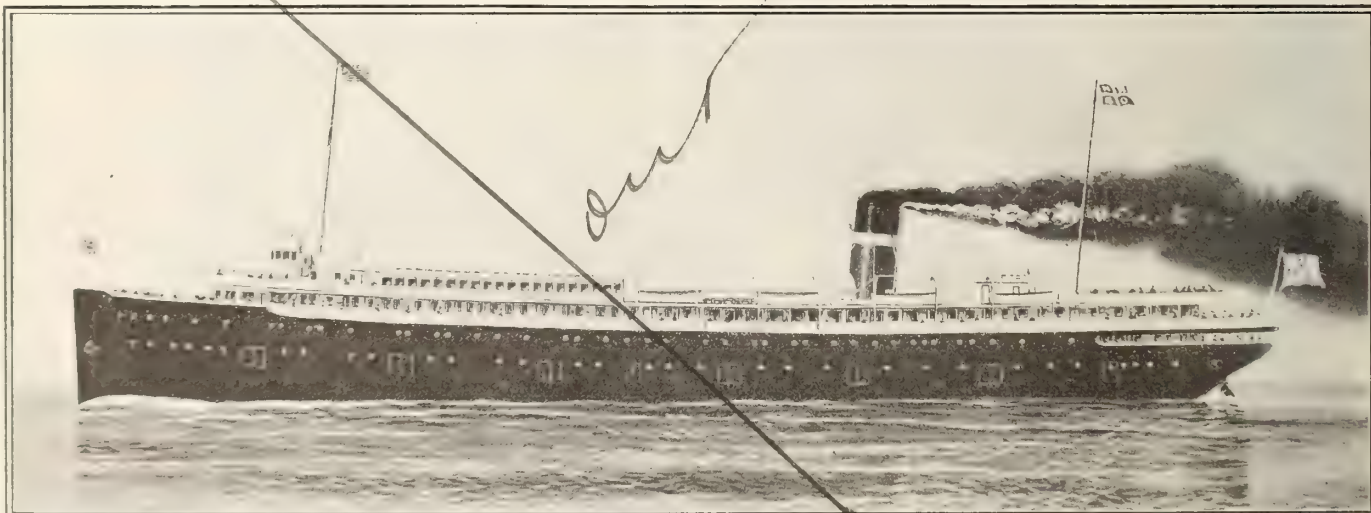
**Dearborn Chemical Company of Canada, Limited**

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## PAINTS AND VARNISHES



MARTIN-SENOUR Marine hull paints fill the requirements of an efficient paint for use on hulls, which is perhaps the most exacting of any that is used above the waterline. Specify MARTIN-SENOUR marine paints and note the difference.



*The* **MARTIN-SENOUR Co.**

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PRODUCERS OF PAINTS AND VARNISHES  
CHICAGO MONTREAL WINNIPEG  
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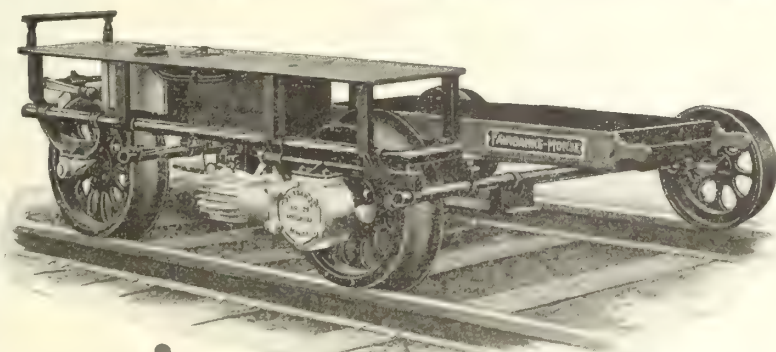
# MODERN HIGH-CLASS ROLLING STOCK



Passenger, Freight  
and  
Electric Railway,  
Car Castings,  
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No. 36 F.M. Gasoline Motor Car.

### Fairbanks- Morse Section Motor Cars

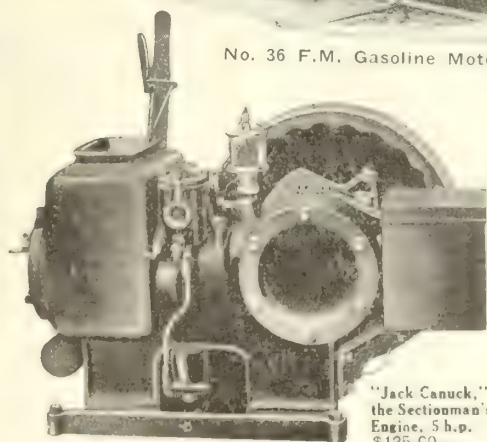
Are made in many different  
styles to suit all railway con-  
ditions.

They are built by engineers who have had the widest  
experience in railway work, and who know how to make  
cars which will give the utmost service. F.-M. Cars are  
standard equipment on most of the larger railways in the  
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Full specifications on request. Do not  
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fore placing your order.

### The Canadian Fairbanks-Morse Co., Limited

St. John, Quebec, Montreal, Ottawa, Toronto, Hamilton, Winni-  
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"Jack Canuck,"  
the Sectionman's  
Engine, 5 h.p.  
\$125.00.

Canada's Departmental House for Mechanical Goods



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MANUFACTURERS OF

## BASIC OPEN HEARTH STEEL RAILS

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HEAD OFFICES  
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**SYDNEY, CAPE BRETON, CANADA**

## The Parmelee Pipe Wrench "The Toothless Wonder"



PRICE LIST C

Length Handle	Set No.	Pipe Handled	Set Complete	Extra Handle	Extra Girths
10 in.	1	$\frac{3}{8}$ , $\frac{1}{2}$ , $\frac{3}{4}$ , 1 in.	\$5.00	\$2.25	$\frac{3}{8}$ , $\frac{1}{2}$ , $\frac{3}{4}$ , 1 in. \$ .75
20 in.	2 $\frac{1}{2}$	$\frac{3}{8}$ , 1, 1 $\frac{1}{4}$ , 1 $\frac{1}{2}$ , 2 in.	7.50	2.50	$\frac{3}{8}$ , 1, 1 $\frac{1}{4}$ in. 1.00 1 $\frac{1}{2}$ , 2 in. 1.25
25 in.	3 $\frac{1}{2}$	1 $\frac{1}{2}$ , 2, 2 $\frac{1}{2}$ , 3 in.	7.50	3.00	1 $\frac{1}{2}$ , 2, 2 $\frac{1}{2}$ , 3 in. 1.25

Prices on larger sizes furnished upon application.

**Rice Lewis & Sons, Ltd.**

TORONTO, CANADA.

DESIGNED ESPECIALLY to handle pipes spaced closely as in coil work. No. 2 $\frac{1}{2}$  wrench illustrated requires but three-quarter inch space between pipes.

POSITIVE GRIP instantly taken. Operates without lost motion in stroke of handle. Can be locked or released easily in any position on the pipe.

RATCHET-LIKE ACTION. Successive grips can be taken without having to hold the wrench on the pipe. By a slight twist of the handle, which is round and knurled, the wrench is locked in any position.

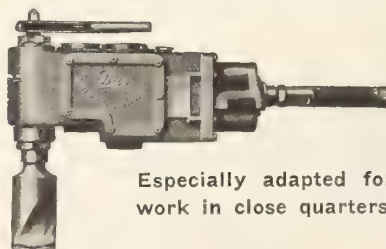
CAN'T CHEW. The Parmelee will make or break the tightest joints without injuring pipe or threads, as it has no teeth. The only wrench suitable for galvanized pipe.

CAN'T CRUSH. The Parmelee will grip, without crushing pipe that has become weakened by long use or exposure and separate hopelessly rusted joints, saving its cost many times over.

**Thor**

## Most Convenient Air Tool Made

### CLOSE CORNER DRILL



Especially adapted for work in close quarters.

Made in Two Sizes:

- No. 8. For Drilling up to 1 $\frac{1}{4}$  in.  
No. 9. For Drilling up to 3 in.

The neat and compact construction, together with the design of the mechanical parts, makes it possible to drill holes in places where it would be absolutely impossible with an ordinary centre spindle drill.

Every experienced mechanic appreciates the value of a Thor Close Corner Drill for steady service and economy. Order one on trial to-day. We take all the risk.

**INDEPENDENT PNEUMATIC TOOL COMPANY**

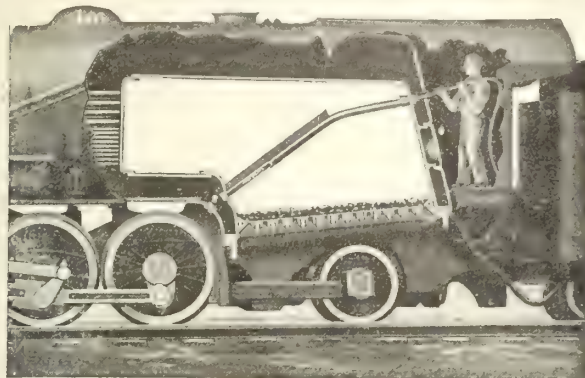
334 ST. JAMES ST., MONTREAL, QUE.

W. H. ROSEVEAR & SON, WINNIPEG, MAN.





Lagonda Arch Tube Cleaner.



Lagonda Cleaner Removing Scale from Arch Tubes.

## LAGONDA ARCH TUBE CLEANERS

Scale forms in the Water Arch Tubes of Locomotives, and it must be removed, as Government Inspection requires that these tubes be absolutely clean.

The Lagonda Arch Tube Cleaner will remove these scale deposits easily and quickly. They are built for all sizes of tubes and can be driven by either water, air or steam. Send for Catalogue W-1 describing the construction and operation of these Cleaners.

Other Lagonda Boiler Room Specialties are described in our General Catalogue L-8. Send for Copy.

### Babcock and Wilcox, Limited

Head Office for Canada  
St. Henry, MONTREAL

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## Fire Tube Marine Superheater--Eight Reasons Why

1. It is adaptable to either new or existing boilers of the fire tube type, and can be applied with no change in design or construction.
2. It renders possible an increase in output of boiler horse power from a given boiler plant 10% to 20%.
3. It will produce the same power output with fewer boilers.
4. It reduces the size of the bunkers, thereby reducing the draft of the vessel with a given cargo, or making possible an increase in revenue cargo.



5. It results in a saving of fuel over saturated plants, both operating under the same draft conditions, of 10% to 20%.
6. It reduces the maintenance costs by the prevention of water hammer, leaky flanges, and condensation in the cylinders.
7. It does not prevent rapid, thorough, and frequent cleaning of the tubes.
8. Its construction provides easy access to all screwed joints and the easy removal of the parts.

### LOCOMOTIVE SUPERHEATER COMPANY

30 CHURCH ST., NEW YORK, N.Y.

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Manufacturers of

Steel Rails, Splice Bars, Tie Plates, Forging Billets, etc.

We would be pleased to have your enquiries for 1916 deliveries.

Works and Sales Department: Sault Ste. Marie, Ontario, Canada



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No. 75—DOUBLE ELLIPTIC SPRING  
With Reinforced Leaves and Cast End

## RAILWAY SPRINGS

LOCOMOTIVE, TENDER AND PASSENGER CAR SPRINGS of every description.  
EQUALIZING, DRAWBOARD, BUFFER AND SPIRAL SPRINGS of all kinds.

STREET RAILWAY SPRINGS, from the largest to the smallest.

TRACK TOOLS, RAIL BRACES, TIE PLATES, GUY ANCHORS AND RODS, LOCOMOTIVE SANDERS,  
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## JAS. W. PYKE & COMPANY, LIMITED IRON, STEEL AND METAL MERCHANTS

STEEL PLATES—Firebox, Flange and Tank Qualities.

STRUCTURAL SHAPES—Beams, Channels, Angles, Tees, Zees, etc.

MACHINERY STEEL & STEEL SHAFTING—

STEEL BILLETS & FORGINGS—of all descriptions.

BOILER TUBES—Seamless and Lapwelded.

*We solicit your inquiries when in the  
market for any of the above material.*

OFFICE: Commercial Union Building,  
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**MONTREAL**



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## HEADLIGHTS

Commercial Acetylene furnishes a strong, penetrating light without being blinding. Nothing to get out of order. Economical to maintain. Small gas cylinder supplies several weeks' lighting.

## CAR LIGHTING

Commercial Acetylene furnishes an ideal system for all kinds of passenger cars. It combines efficiency and economy. Standard cylinder supplies from one to two months' lighting of the average car.

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Commercial Acetylene furnishes an absolutely reliable light. Failures eliminated and cost of maintenance reduced. Cylinder placed at foot of pole supplies several months' lighting without attention.

## Commrcial Actylene Railway Light and Signal Company

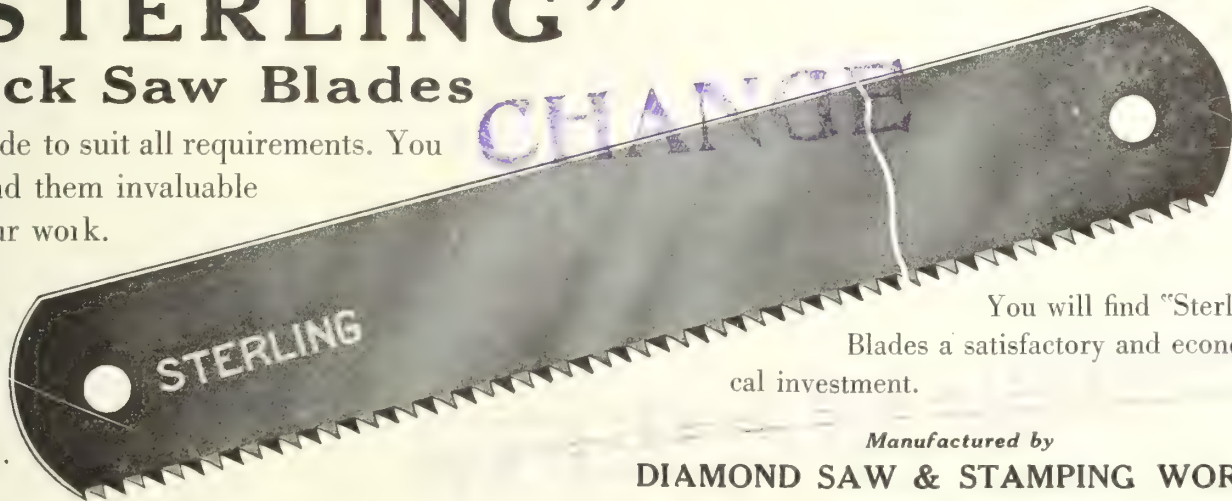
103 BAY STREET, TORONTO

Main Office 80 Broadway, New York

Branches: Atlanta, Boston, Chicago, San Francisco

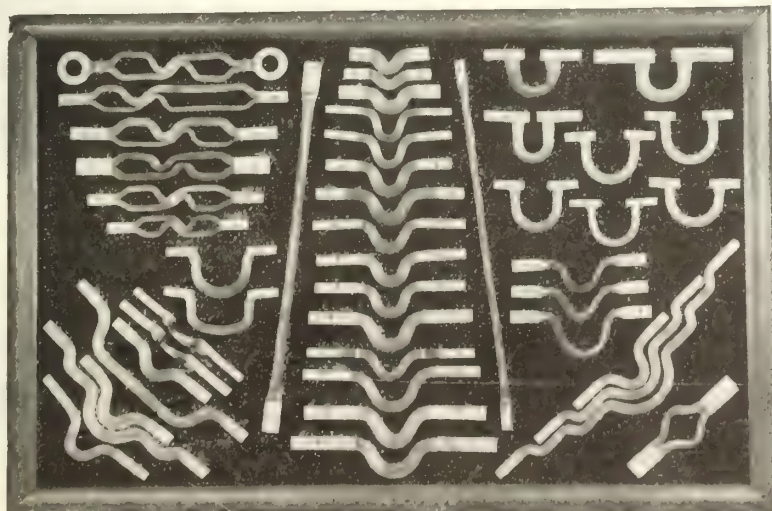
## "STERLING" Hack Saw Blades

are made to suit all requirements. You will find them invaluable for your work.



You will find "Sterling" Blades a satisfactory and economical investment.

Manufactured by  
**DIAMOND SAW & STAMPING WORKS**  
BUFFALO, N.Y., U.S.A.



## Electric Weld Rail Bonds

meet every condition.

Neither do they corrode at the terminals.

**The Electric Railway  
Improvement Co.**

Cleveland, Ohio





28 "Service" Branches Throughout Canada

CANADIAN CONSOLIDATED  
RUBBER CO., LIMITED

MONTREAL, P. Q.



# True Efficiency

Permits no Man to Waste His Time  
or Energy

*CHANGE*  
Institutions such as ours are time-savers and energy-savers. When you utilize them, you promote your own efficiency---you know you are buying goods that represent the result of mature experience and painstaking care.

Our line-up is complete, our quality is unexcelled, and our prices are right. Let us show you what we can do.

*It is our desire to serve you.*



CANADIAN CONSOLIDATED  
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MONTREAL, P. Q.

28 "Service" Branches Throughout Canada





# Canadian Railway and Marine World

November, 1915.

## Canadian Pacific Railway's Passenger Terminal Improvements at Winnipeg.

The C.P.R. has recently completed extensive improvements and additions to its passenger terminal and hotel at Winnipeg. The general waiting room and such station facilities as ticket office, parcel room, news stand, telephone office and restaurant have been enlarged and re-arranged; the tracks have been raised 6 ft., and a spacious midway, second class waiting room and baggage room have been provided underneath. A new steel and concrete viaduct over Main St., to carry the tracks at the higher elevation, and an addition to the Royal Alexandra

vide for the future extension of the station tracks to the north, without interfering with the established roadway grade and clearances of Main St. passing under the tracks at the west end of the station. The old station track facilities comprised three stub end and three main line tracks for passenger service, and in addition there were two tracks for main line freight service, paralleling the passenger tracks, or eight tracks in all. The main line freight service through the station has since been abandoned, and all except local freight is

service. Permanent platforms have been installed only on the sections where there is a steel substructure; temporary wooden platforms have been laid on the filled sections and will be replaced by permanent platforms later when the new fill has settled. The tracks and platforms over the undertrack rooms are supported by structural steel and concrete, over which there is a waterproofing mat, made up of five layers of asphalt saturated felt and burlap, with an overlay of asphalt mastic 1½ ins. thick, which serves as a protection to the



Passenger Tracks and Platforms, Canadian Pacific Railway Station, Winnipeg, Looking West.

Hotel, are also included. These improvements and additions have cost approximately \$2,500,000, and were made necessary by the rapid growth of Winnipeg and of all Western Canada, which so far exceeded the most sanguine expectations, that in 1912 the railway company found its Winnipeg terminal and hotel, completed in 1906, wholly inadequate to handle its increased business.

The object of raising the station tracks was three fold: first, to provide a midway under them and thus avoid the necessity of crossing the tracks at grade; second, to provide space for a baggage room, second class waiting room and other station facilities beneath the tracks; and third, to pro-

vide for the future extension of the station tracks to the north, without interfering with the established roadway grade and clearances of Main St. passing under the tracks at the west end of the station. The old station track facilities comprised three stub end and three main line tracks for passenger service, and in addition there were two tracks for main line freight service, paralleling the passenger tracks, or eight tracks in all. The main line freight service through the station has since been abandoned, and all except local freight is

now routed over a new freight line skirting the city on the north. The new station track layout provides four platforms, served by two stub end and six main line tracks, four of which tracks will each accommodate a 15 car train. Adjoining tracks are on 13 ft. centres, while the spacing between track centres, across platforms, is 26 ft.; the platforms are normally 15-13 ft. wide.

Although passengers and baggage must use the same platforms, little inconvenience is experienced. The passengers move toward the midway stairs, while all lengthwise shifting of baggage is done below on the baggage room floor level, to a point near the end of each platform, where a lift is located, eight lifts being provided for this

waterproofing under the tracks and as a wearing surface on the platforms. The passenger stairways to the midway under the tracks are 5 ft. wide and are enclosed with ornamental iron and glass kiosks. For the present, no other shelter will be provided over the platforms, but provision for shelter supports has been made in the platform structure, and foundations are provided on the filled sections.

The new interior arrangement of the station is believed to be equal to the best in Canada, from the standpoint of the travelling public, as well as from an operating viewpoint, and combines safety and convenience. As a passenger enters the general waiting room from Higgins Ave., the

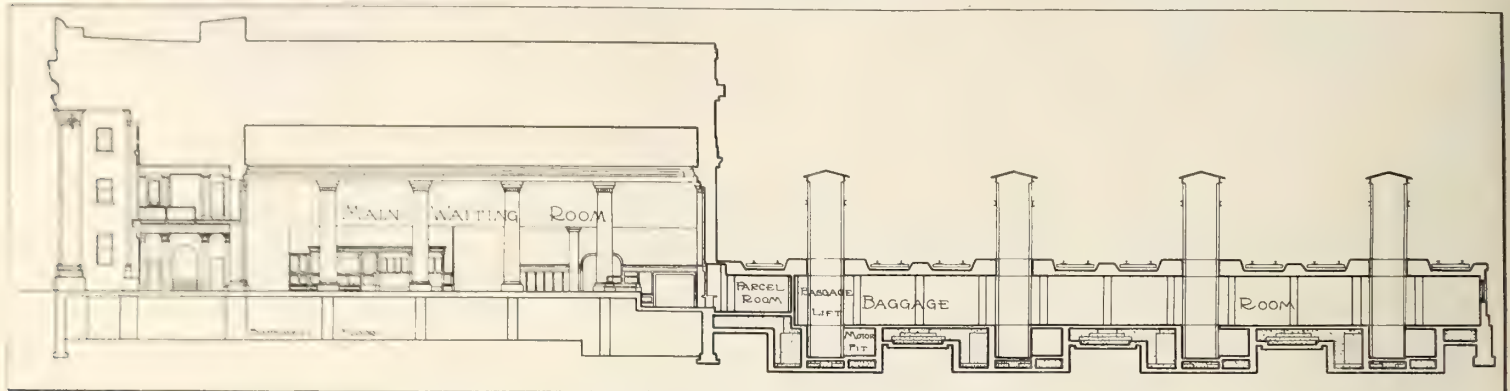


ticket office, having 10 ticket booths, is located on the east, or his right hand side, and he faces the baggage and parcel checking rooms and offices of Canadian and U.S. Customs, which are under the tracks between the waiting room and the baggage room. The waiting room in front of these facilities is depressed about 4 ft. to the level of the floor in these rooms and the midway. A broad stairway near the entrance

room of much congestion. Passengers who have secured their tickets in advance will find this a convenient entrance.

The old station restaurant and lunch room, located on the east side of the general waiting room, was abandoned to make room for the new ticket office, and is replaced by a new restaurant and lunch room, entered from the west side of the waiting room, and which occupies the space in

three 9 ft. doorways, equipped with sliding bronze doors, connect the waiting room with the midway under the tracks. Normally, outgoing passengers are held at this point until their train is ready. The midway, 48 ft. wide, extends under all four platforms and is finished with white glazed tile walls and white chip terrazzo floor. Two stairways are provided to each of the four platforms above.



Canadian Pacific Railway Station, Winnipeg. Section through main waiting room and baggage room.

to the midway, and three smaller stairways opposite the checking facilities, connect the two levels. On the Maple St. side a new entrance to the station has been provided, near the baggage room receiving platform, for the convenience of passengers bringing or taking away baggage in a conveyance with them.

A new street exit is located west of the

the connecting office building which was formerly the baggage room. This new restaurant and lunch room has a U shaped counter with 57 stools, and tables are arranged along the outside wall. The new lunch room is operated in conjunction with the Royal Alexandra Hotel; the food is prepared in the hotel kitchen and delivered in bulk through a private passage way to a

A large second class waiting room is conveniently located on the west, or left hand side, of the midway. On this side are also rooms for Station Master, Dispatcher, conductors, trainmen, Advertising Agent, C.P.R. police, and the caretaker. Ventilation in these rooms is provided by motor driven supply and exhaust fans, with the necessary distributing ducts, and provides



Canadian Pacific Railway Hotel and Part of General Offices, Winnipeg, from the South.

broad stairway and directly in front of the midway. The sidewalk at this point is sheltered by a marquee 50 ft. long, overhanging the curb about 4 ft., permitting passengers to enter a conveyance in rainy weather without exposure. This exit also serves as an entrance for special excursion crowds, which are permitted to pass directly to the trains, purchasing their tickets at a portable ticket booth on the way, thus relieving the general waiting

serving room which adjoins the lunch room on the west end.

A corridor has been provided connecting the station with the Royal Alexandra Hotel. This corridor, from its entrance at the west side of the waiting room, ramps down through the connecting office building and continues level through the basement to the hotel elevators, and a new stairway to the hotel rotunda.

Directly opposite the new street exit,

a complete change of air in each room every 10 minutes.

The new baggage room, 160 x 130 ft., occupies the space on the east, between the midway and the Maple St. concourse. At the end adjoining the midway are rooms for bonded baggage, company mail service, lavatories and lockers; of these, the mail room only has access from the midway. At the east end of the station Maple St. has been depressed and extended under the



tracks to provide a wagon concourse for team delivery to the baggage room; a loading platform, 10 ft. wide and 3 ft. above the roadway, connects with the baggage room through eight doorways, each 8 ft. wide by 7½ ft. high, equipped with vertical bi-folding doors. Three baggage weighing scales are located just inside the room between doorways. The eight electric lifts, each with a capacity of 6,000 lbs., and a car 5 x 15 ft. handle the baggage and mail between the baggage room and the track level. Four of them are located in the rear of the baggage room and serve the easterly ends of the platforms above; the other four serve the westerly ends of the platforms, and are connected, by a trucking subway, with the baggage room. An unclaimed baggage room has been provided in the basement of the station, under the general waiting room, and a reversible wood apron conveyor handles baggage between it and the baggage room. This conveyor also carries packages of stationery between the baggage room and the company's general stationery stores, which adjoin the unclaimed baggage room. Out-bound baggage is classified, as received, and arranged in groups on the south side of the baggage room; these groups are numbered to correspond with train numbers. The north side of the room is used for incoming baggage, which is classified in 10 groups, numbered 0 to 9, the next to the last figure in the check number determining the group. This arrangement of grouping incoming baggage facilitates locating pieces by check number, and in cases where one person checks more than one piece,

depression under the viaduct; the C.P.R. also furnished the fill to raise the street grade. As a consideration, the city gave the company the privilege of placing two temporary freight tracks across Main St. and on Point Douglas Ave., an unused street, on condition that the railway company would remove them as soon as it had completed raising the permanent tracks. The new viaduct is of structural steel, with ornamental concrete covering, and the street level underneath has been raised 5½ ft., but in order to provide for probable future extension of the trackage, the grade on the approaches has not been changed.

As the station track facilities were already overtaxed, the work of raising the tracks had to be carried on without reducing the number of passenger tracks in service and in a way that would permit traffic to continue uninterruptedly. This was accomplished by replacing the two freight tracks with the two previously mentioned temporary tracks, which were placed at the new high level, on a pile and timber trestle, on Point Douglas Ave., just north of the old tracks and connecting into them several hundred feet beyond the terminal area. The construction work was divided into six stages; each, except the last stage, comprising one track, the first and alternate stages including a platform. The removal of the two freight tracks made room for the first stage work, comprising the northerly track and platform, without disturbing any of the passenger tracks. The second stage work was commenced when the first stage was completed and its track put in service; the remaining stages

The addition to the Royal Alexandra Hotel was completed about a year ago and having already been described in a previous issue of Canadian Railway and Marine World, the following brief outline will suffice. It adjoins the old hotel on east and north sides, covering about 20,000 sq. ft. of ground. On the east side it has a frontage of 100 ft., facing south on Higgins Ave., and on the north, or track side, extending from the west wing of the old hotel to the west end of the connecting office building, a distance of 240 ft. The addition is of the same height as the old hotel, and provides 185 additional bedrooms, also a ball room 46 x 96 ft., a banquet room about the same size, a grill room 38 x 46 ft., and 11 private dining rooms. The old kitchen has been newly equipped and more than doubled in size by extending it into the addition. In order to have a rear entrance for the use of the hotel servants and for receiving hotel supplies, a new subway has been provided under the tracks, connecting Point Douglas Ave. with an entrance to the hotel basement; this subway has a 17 ft. driveway, with a 15 ft. sidewalk at the side, which also serves as a trucking way to the baggage lifts previously mentioned.

The work was designed and executed by Westinghouse, Church, Kerr & Co., engineers and constructors of New York and Montreal, in co-operation with and under the direction of J. G. Sullivan, Chief Engineer, and Frank Lee, Principal Assistant Engineer, Western Lines, Canadian Pacific Ry. Construction work on the addition to the hotel was started in June, 1913; and the track elevation work and



Canadian Pacific Railway Station and Part of General Offices, Winnipeg, from the South.

they will be found in one or, at most, two adjoining groups. More than 1,200,000 pieces of baggage are handled at this station in a year.

At the west end of the station area, the former eight tracks and platforms were carried over Main St. on a reinforced concrete arch viaduct of five spans. This structure was removed and replaced by the C.P.R. at an expense of over \$100,000, in order that the city might reduce the street

were carried on in the same order until the sixth, or final stage, when all three stub end tracks were abandoned and replaced by three new tracks. For handling passengers and baggage across the stage under construction, between the old and the new high level platforms, temporary ramps and stairways were provided, which were relocated and re-arranged as each new track was completed, and the work was carried on with scarcely any inconvenience to the public.

station improvements in Aug., 1913.

An illustration of the interior of the waiting room is given on pg. 416.

Employees of the Grand Trunk Motive Power Department, Point Charles, Montreal, sent a cheque, Oct. 7, for \$1,388.40 to the Canadian Overseas Red Cross Fund to provide comforts for men at the front, and a cheque for a smaller amount to the Christmas Gift Fund for Soldiers.



# The Canadian Northern Railway's Use of Toronto Union Station.

MR. HENRY L. DEAYTON, Chief Commissioner, Board of Railway Commissioners, gave the following judgment, Sept. 24, which was concurred in by Commissioners McLean and Goodeve:

The question of the facilities that the Grand Trunk Ry. must provide the Canadian Northern Ry. in Toronto union station has been several times before the Board. Apparently the underlying cause of the present difficulty, or at least the reason why the present issue was raised, is the non-pay-

An agreement was arrived at on Nov. 7, 1906, between the companies. Paragraph 5 of the memorandum which evidences it is as follows:

"5. The following is made as a temporary arrangement, viz.: The Canadian Northern Ontario to have the right to run its passenger trains to and from the union station, Toronto, on the Grand Trunk track from and to the said point of connection between the lines at the Canadian Northern Ontario freight yards under the usual terms relating to similar rights given by one company to another. For this right the Canadian Northern Ontario shall pay the Grand Trunk as follows, viz.: For use of tracks of

The memorandum also makes the provisions of the Winnipeg agreement between the Canadian Northern and the Grand Trunk Pacific Railway Companies relative to liability in case of accidents and damages, applicable to the Toronto situation.

A joint application was subsequently made by the Grand Trunk and Canadian Pacific requiring the Board to settle the amount of money to be paid by the Canadian Northern and other terms and conditions. The Board's judgment on this appli-



General Waiting Room, Canadian Pacific Railway Station, Winnipeg.

ment of and disputes as to rendered accounts.

The rights of the Canadian Northern appear in the first instance to have been secured by order 356, Feb. 23, 1905, paragraph 6 being as follows:

"That the applicant company make provision in the present union station for the passenger trains and traffic of the James Bay Ry. Co. as soon as the said company requires the use thereof, and until the proposed new union station hereby authorized is completed and ready for use, which provision and accommodation shall be paid for by the James Bay Ry. Co. on such terms as may be agreed upon between it and the applicant company; and, in case the interested companies cannot agree on the amount to be paid, or on other terms and conditions, the points in dispute shall be settled by order of the Board."

Grand Trunk for said temporary arrangement the charge shall be \$1 for each baggage, mail, express coach and sleeping car entering the union station, and the same amount for each such car departing from the station, and subject to the consent of the Canadian Pacific there shall be another charge of \$1 for each such car to cover the use and service of the station, the total charge to the Canadian Northern Ontario being \$2 per each such car to cover use of tracks and use and service of said station, each way on cars arriving and departing from station."

"6. The payments above mentioned shall cover all charges against the Canadian Northern Ontario under this temporary arrangement, including share of maintenance, operating expenses, station use, including switchmen, ticket agent, and other employees, rental, and for such payments the Canadian Northern Ontario shall be entitled to all proper services and accommodation."

cation, delivered June 1, 1909, refused the application, which was to increase the payments to be made by the Canadian Northern; and directed that the agreement of Nov. 7, 1906, should govern. The Board did not pass upon the issue one way or the other as to whether the prices fixed by the agreement were just; but, recognizing that the whole arrangement was merely of a temporary character, determined to continue it until such time as the union station was completed. The judgment was carried into effect by order 7199, which provides that the Canadian Northern shall continue to pay the Grand Trunk for the use of the present union station and yards, the amount



agreed upon between these companies under the agreement of Nov. 7, 1906.

No further application was made to the Board until March, 1915, when the Canadian Northern complained that the Grand Trunk had notified it that on and after March 26 it would not take care of the Canadian Northern equipment and locomotives arriving on passenger trains at the union station. The Board thereupon made an ex parte direction that the services and facilities extended to the Canadian Northern at the union station and yards in the past should be continued until after a hearing, which took place in Toronto March 30, 1915. At this hearing, the claims advanced by the Grand Trunk were that the Canadian Northern had not paid a bill since March or April of 1907. On the other hand, the Canadian Northern claimed that the Grand Trunk Pacific had not paid the Canadian Northern a cent of rental at Edmonton since Nov. 22, 1909. Mr. Fritch (Assistant to President and now also General Manager, Eastern Lines, Canadian Northern) stated that as a railway, the Canadian Northern did not owe the Grand Trunk as much as the Grand Trunk owed the Canadian Northern. He also said: "We are willing to pay their bills promptly as soon as accounts are rendered," and a direction was made at the hearing for a temporary continuance of the service, until such time as the Board's Chief Engineer and Chief Operating Officer could go into the whole question of the actual operation at the union station.

The Chief Operating officer on April 15 made his report as to the conditions, which was concurred in by the Chief Engineer. This report states that, after going into the matter carefully with the companies, he finds that the Grand Trunk makes no complaint as to the question of the service in the union station or in the movement of Canadian Northern trains between Don Jct. and the union station, and points out that as this is the case there is no question of a public service being affected; and, therefore, recommends that the case is one which the railway companies should settle between themselves. Copies of the report were sent to both companies, and on April 27 the Grand Trunk requested that the case should be set down for hearing on May 4, claiming that no overtures had been made by the Canadian Northern. The case was accordingly listed for hearing. On receipt of a letter from Mr. Fritch stating that his company was prepared to meet the Grand Trunk, with a view to adjusting the differences, the case was struck off the list.

No negotiations apparently took place between the companies, nor was anything done beyond the fact that both companies wrote to the Board complaining that each owed the other large sums of money; but, on Sept. 3, the matter was again brought to a head by the Grand Trunk refusing to supply the Canadian Northern with water for cleaning cars, or to permit the Canadian Northern to lay pipes on Grand Trunk property through which water could be brought for cleaning purposes; and the Canadian Northern asked for a direction that the water service be continued. The Board's direction to continue the service was given on Sept. 10, and the case set down for hearing on Sept. 14. At this hearing, Mr. Fritch stated that a meeting had taken place between the officials of the two companies and that statements were gone into, with the result that it was found that the indebtedness of the Canadian Northern to the Grand Trunk was \$1,364,912, and the indebtedness of the Grand Trunk to the Canadian Northern \$1,104,955, leaving a balance in favor of the Grand Trunk of \$259,957, subject to further reductions and adjustments arising out of the Edmonton

situation. Mr. Fritch further stated:

"A promise was made to the Grand Trunk people that shortly after Aug. 1 we would make them a substantial payment on account. Mr. Hanna, our Vice President, went west a few weeks ago and had just returned, and it is his purpose to carry out that promise. That is as far as the financial arrangement is concerned."

The report of the Chief Operating Officer was not challenged by the Grand Trunk, so that the Canadian Northern's right to run its trains along the front and into and out of the union station is not in question. On the other hand, it is confirmed by the arrangement which the Grand Trunk is now willing to enter into, as evidenced by the following telegram from Mr. Kelley (Vice President, G.T.R.) to Mr. Fritch:

"We will permit without trackage charge the movement of your passenger equipment made empty at union station, Toronto, to your proposed coach yard at Rosedale, and also movement of your empty passenger equipment from your proposed coach yard at Rosedale to the union station when destined for passenger trains leaving that station, this to continue as a temporary arrangement the same as your present use of the union station and subject to the same limitations."

This telegram was in reply to a telegram from Mr. Fritch to Mr. Kelley asking if free trackage would be given on deadhead equipment in and out of the union station.

It appeared to the Board that it would be very much cheaper for the Canadian Northern, and prevent the different street crossings and railway tracks being subjected to an unnecessary use, if all the work incidental to cleaning cars, coaling locomotives, and making up trains, was continued to be done by the Grand Trunk, under the verbal arrangement which it was stated that the companies had entered into. Although the position was taken by Mr. Chisholm, who appeared for the Grand Trunk, that the Board had never taken the position that it could order one company to supply another with coal or even water, a direction was made that the supply of water should be continued, on the payment by the Canadian Northern of \$10 a month for the service; and the Canadian Northern was asked to define exactly what work it would like the Grand Trunk to perform for it and at what prices; and at the same time give the Board information on the question of payments and what instalments on account would be furnished. Mr. Fritch has since supplied the Board with details of the service required, including a tariff at which the work should be done. This service includes, not only cleaning of cars of all kinds and trucks, but ice, water, lubricating and illuminating oil, waste, lamp wicks, lamp chimneys, supplies, and inspection and air brake testing. It also includes certain repairs to equipment. The communication, however, did not make any reference to the matter of payment of arrears, which are, although considerably less than originally claimed, substantial. Mr. Fritch, on being written to requiring that his company should submit a statement of what it proposed to do regarding the payments to the Grand Trunk, advised the Board that he was unable to state the exact date or amount that his company was able to pay, but that it was the intention to do everything possible in the near future to make a substantial payment on account of the union station yard indebtedness. Under these circumstances, it is impossible for the Board to do anything further in relief of the Canadian Northern. The result is that the Canadian Northern trains will continue to run into and out of the union station as heretofore, but that the services which the Grand Trunk has been giving the Canadian Northern apart from any order of the Board, such as the furnishing of water supplied for the cleaning of equipment, and repairs, will no longer continue. I regret the result, as the Grand Trunk would be able to do the work cheaper than the Canadian Northern

will be able to do it, but, in view of the Canadian Northern's neglect, or perhaps inability, to make the Grand Trunk at least a substantial payment on account of its indebtedness, I am of the opinion that it is impossible for the Board to add to any of the orders already made. A further result is that the deadhead equipment of the Canadian Northern will be moved from the union station to its own yards on the terms agreed to by Mr. Kelley in his telegram.

### Suits Respecting the Building of the Great Northern Railway of Canada.

Judgment has been reserved by the Quebec Appeal Court in the action of Smith, Barry and McRae against John Hyde, liquidator of the Great Northern Construction Co. The plaintiffs built 88 miles of this line easterly from Hawkesbury, Ont., towards Joliette, Que., on which they claimed there was a balance of about \$200,000 due. In Nov., 1914, the courts awarded them \$63,886. Against this decision both parties appealed, and the Appeal Court after hearing arguments reserved judgment.

An action is before the Quebec Supreme Court, in which John Hyde, liquidator of the Great Northern Construction Co., is the plaintiff, and J.G.Scott is the defendant. This is a test case, several other actions of a similar character having been entered. The plaintiff company was formed in West Virginia, for the purpose of constructing a railway in extension of the old Laurentian Ry. from near Joliette, Que., to Hawkesbury, Ont. The contract was entered into with the Great Northern Ry. in May, 1899, and subsequently a contract was entered into by the construction company, by which Smith, Barry and McRae were to build the line. The construction company received cash, bonds and stock from the railway company, and after having paid considerable sums to the actual builders of the line, distributed the balance among its shareholders. The actual builders claimed further sums, and the construction company having no funds, went into liquidation. The liquidator claims that the shareholders of the construction company wrongfully received the railway company's bonds, and now seeks to recover them. The face value of the bonds in the case against J.G.Scott, is \$6,000.

The line in question now forms part of the Canadian Northern Ry. System.

**Inspection of Grand Trunk track.**—The officials of the G.T.R. maintenance, operation and construction departments began an inspection trip over the company's lines on Oct. 7, leaving Toronto by a special train having at its rear end an observation car fitted with electric indicators and other appliances for recording the decisions of the experts as they journeyed over the lines. This car was fully described and illustrated in Canadian Railway & Marine World for April 1915. H.R.Safford, Chief Engineer, was accompanied on the trip by M.S.Blaiklock, Engineer of Maintenance of Way, the general superintendents, superintendents of divisions, track supervisors, inspectors of bridges and buildings, signal engineer, supervisors of signal, track foremen, and others. Each division on the system was carefully scrutinised and a record kept of the results.

**The busiest passenger station in England** is said to be the Liverpool St. terminus of the Great Eastern Ry., in London. During the 24 hours there are over 1,400 passenger trains handled in and out; no less than 278 trains carrying over 75,000 passengers being handled inward, between 6 and 9.30 every morning.



# Railway Mechanical Methods and Devices.

## Milling Shoes and Wedges in Grand Trunk Railway Shops at Stratford.

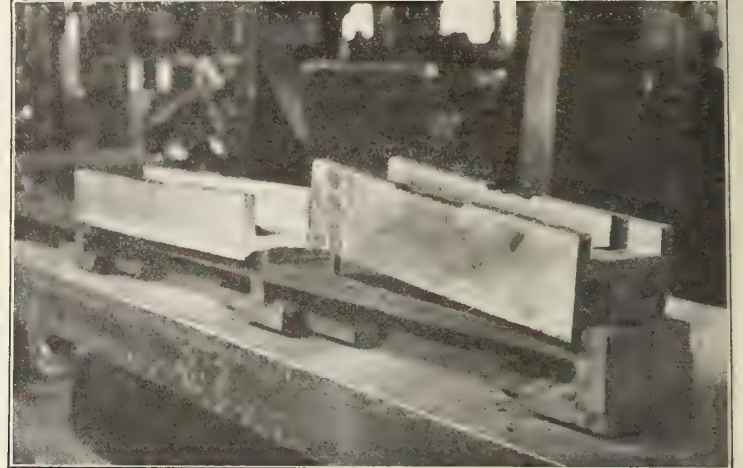
All the shoes and wedges made in the G.T.R. shops at Stratford, Ont., are manufactured on a horizontal milling machine, the jig shown in the accompanying illustration being used for both. The jig, it will be observed, is a double decked casting, the lower face planed and with a longitudinal

much superior to the older practice from the standpoint of tool renewal. The body is brass shell, cast with the central pin hole and roller cavities as cores. The body is turned on the outside, and the central core reamed out, but the roller cavities are left as cored, and as a perfect fit is not essential, they answer the purpose quite as satisfactorily as the usual type. Instead of the spring band around the outside, there is a cast band, with a 1-16 in. slot over each of

of vertical fingers, knife-edged on the inner face, into which the hose and coupling are depressed, with the knife edges entering the slight space between the hose end and coupling shoulder. Turning on the air forces the plunger out, stripping the hose from the coupling. The other coupling at the opposite end is handled in the same manner, only no auxiliary nut is required, as the shape of the coupling lends itself to gripping in behind the folding arm.



Removing Air Hose Couplings.



Jig for Milling Shoes and Wedges.

rib to fit in the miller table, and with bolt holes, while the upper face is also finished with cross ribs to act as stops for the shoes and wedges placed thereon. For the wedges there are three pairs of adjustable studs to raise the wedge end for the requisite taper. The practice is to first mill off the back of the shoes and wedges, then place in this jig, which will hold three, placing two jigs end for end to take a total of six. A combination cutter will then finish the three inside faces and four outside ones in one pass. This jig has been found to be a great

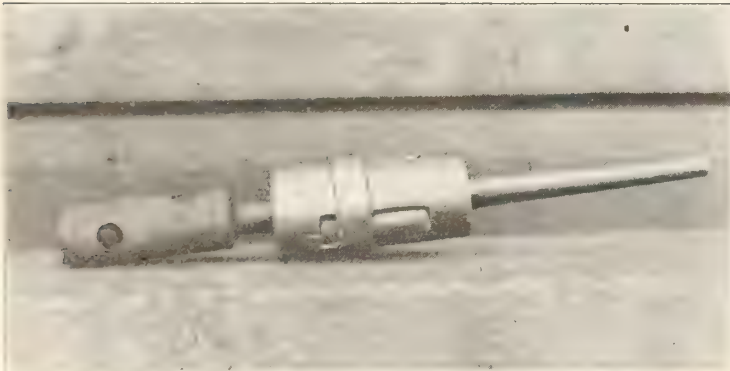
the rollers to clear the dirt, which maintains the rollers in position. The rollers are inserted in the tool from the inside in the usual manner.

## Removing Air Hose Couplings in Michigan Central Rd. Shops, St. Thomas.

There is in use in the M.C.R. car shops at St. Thomas, Ont., a handy air operated machine for removing the couplings of air

## Milling Valve Strips in the Grand Trunk Railway Shops at Stratford.

A jig for holding valve strips while having the cross slots for mortising at the corners, and which is of simple design, is in use in the G.T.R. shops at Stratford, Ont., and is illustrated herewith. From the very nature of their lightness and small section they do not offer themselves to rapid handling on the machine, requiring under ordinary conditions to be set up separately for



Tube Expander With a Cast Brass Body.



Jig for Holding Valve Strips for Mating Slots.

time saver, as well as making possible rapid production of interchangeable shoes and wedges.

## Tube Expander in Pere Marquette Railroad Shops at St. Thomas.

The conventional tube expander, consisting of a shell containing 3 rollers with central tapered pin is in almost universal use for fitting tubes into the tube sheets. It is usually made from a solid body, cut from bar stock, with the three roller cavities drilled and reamed out. The P.M.R. shops at St. Thomas, Ont., have a wrinkle that is

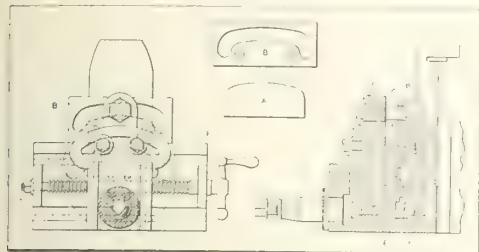
hose when the latter require replacement, and which is shown in the accompanying illustration. The power for the machine is obtained from an old air cylinder, mounted on a work bench, adjoining the machine for mounting air hose couplings, which was described in Canadian Railway and Marine World two years ago. On the threaded coupling of the hose, a nut is loosely screwed on, which fits in behind the hinged arm attached to the cylinder head on the left side of the cylinder as shown. The plunger is attached through a head to a fulcrum arm, pivoted at the rear of the table, the free end of which has an arm with a pair

each piece, and correctly aligned. This jig overcomes many of these difficulties of rapid production. It consists of a forged base for attaching to the milling machine table, cross keys on the under face fitting the table slots. On this base is the strip vise, consisting of a channeled section, in which the strip is set, and secured in place horizontally by two set screws, and vertically by the flange screw in the rear, the flange of which bears on the side of the strip, holding down in place. The milling cutter passes over the strip at the right end, which is shown bevelled in conformity to the cutter.



### Radius Attachment for the Shaper.

The accompanying illustration shows a radius attachment fastened to a shaper head, and the same attachment can be used on a planer. It was designed for use in cutting the required profile on the work A,



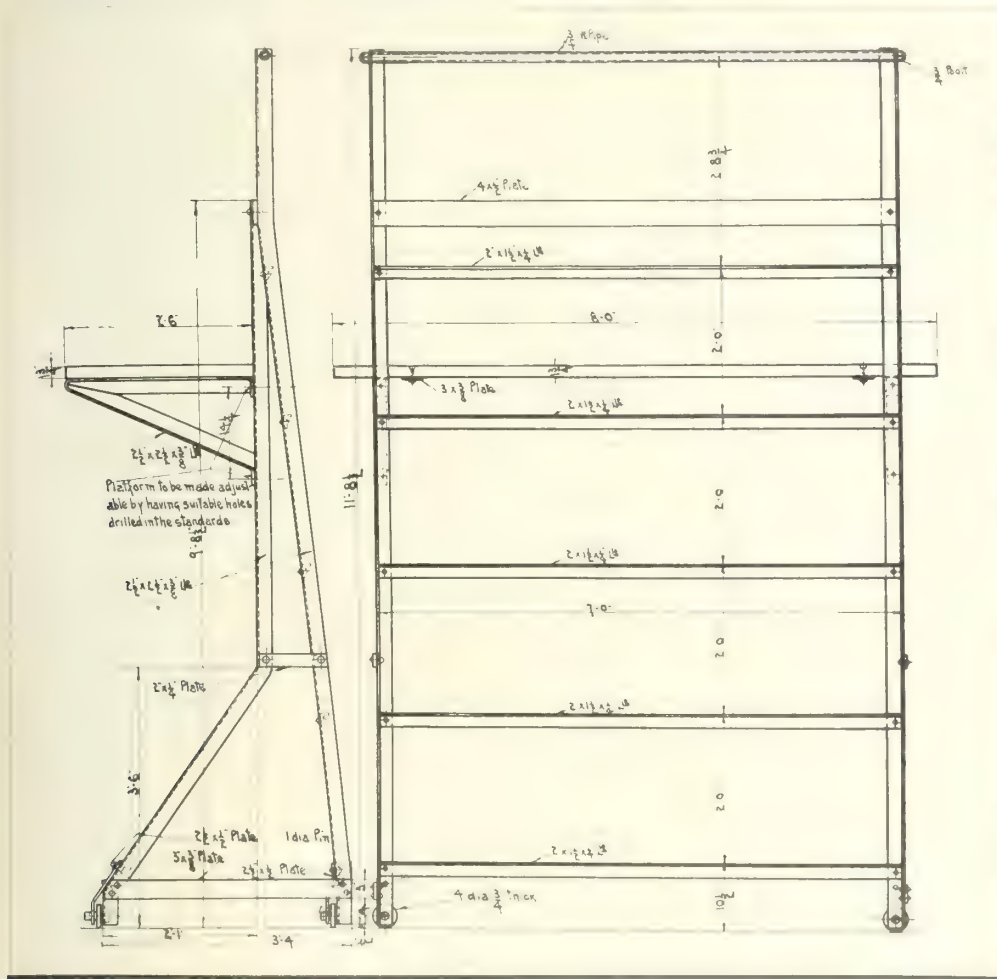
Radius Attachment for Use on Shaper.

which is made of tool steel and  $\frac{1}{2}$  in. thick. A number of these pieces are set up in the vise and the tool is guided by the master form B. A hardened bushing carried on the stud C runs in this form, the stud on which the bushing is carried being screwed

### Portable Shop Scaffold in Canadian Northern Railway Shops.

The Canadian Northern Ry. has developed a standard portable shop scaffold in its mechanical department, which is illustrated herewith. A large number of shops have scaffolding of various kinds attached to the shop columns or to posts specially provided for that purpose. This type of scaffolding is portable, and is readily moved from place to place on its own wheels.

The vertical frame at each end consists of two  $2\frac{1}{2} \times 2\frac{1}{2} \times \frac{3}{8}$  in. angles, fastened together near the top, and braced midway, with a longer cross brace at the bottom, giving a back to back distance at that point of 40 ins. At the base of each upright there is a 4 in. wheel,  $\frac{3}{4}$  in. thick. Between the back uprights there are cross members of  $2 \times 1\frac{1}{2} \times \frac{1}{4}$  in. angles, at 24 in. centres, which serve as steps to the platform on the opposite side. This latter is of  $1\frac{3}{4}$  in. planking, supported on a knee braced piece of  $2\frac{1}{2} \times 2\frac{1}{2} \times \frac{3}{8}$  in. angle from the front vertical member.



Portable Shop Scaffolding Made of Structural Shapes.

into the slide D which carries the tool. A master form of any shape could be used on the same attachment to machine similar work of various shapes. The slide D works freely in the slide E, which is moved along the small crosshead by means of a screw, as shown in the illustration. The whole attachment can be secured to the shaper by merely tightening three screws.—P. Siebold, in Machinery, New York.

**The Latest Feature in the English Railway field** is the introduction of third class Pullman cars between London and Brighton, and London and Eastbourne.

**Ontario Railway and Municipal Board.**—The ninth annual report for the year ended Dec. 31, 1914, which has been issued recently shows that 618 formal applications were made during the year, upon which orders were made. Of these orders 61 affected street railway interests, the more important being dealt with in Canadian Railway and Marine World at the time they were made.

**The C.P.R. is erecting a kiosk** on the station platform at Moose Jaw, Sask., in which samples of western products will be exhibited. A press report states that similar kiosks will be built at Calgary, Vancouver and other points.

### Birthdays of Transportation Men in November.

Many happy returns of the day to—

F. W. Alexander, A.M. Can. Soc. C.E., Division Engineer, Alberta Division, C.P.R., Calgary, born at Fredericton Jct., N.B., Nov. 22, 1878.

J. O. Apps, General Baggage Agent, C.P.R., Montreal, born at Tara, Ont., Nov. 9, 1877.

A. B. Atwater, Assistant to President, lines west of Detroit and St. Clair Rivers, G.T.R., Detroit, Mich., born at Sheffield, Ohio, Nov., 1845.

H. E. Beasley, General Superintendent, Esquimalt and Nanaimo Ry., Victoria, B.C., born at Hamilton, Ont., Nov. 10, 1862.

O. H. Becker, District Freight Agent, C.P.R., Portland, Ore., born in Norfolk County, Ont., Nov. 19, 1873.

G. B. Burchell, General Manager, Colonial Coal Co., North Sydney, N.S., born at Sydney, N.S., Nov. 1, 1877.

J. R. Cameron, Assistant General Manager, Canadian Northern Ry., Winnipeg, born at Truro, N.S., Nov. 5, 1865.

L. D. Chetham, City Passenger Agent, C.P.R., and District Passenger Agent, Esquimalt and Nanaimo Ry., Victoria, born at Matlock, Eng., Nov. 5, 1869.

F. H. Clendenning, Division Freight Agent, B.C. Coast Service and Ocean Steamship Lines, C.P.R., Vancouver, B.C., born at Montreal, Nov. 9, 1881.

F. Conway, City Freight and Passenger Agent, C.P.R., Kingston, Ont., born at Ernestown, Ont., Nov. 19, 1850.

A. S. Cook, Inspecting Engineer, National Transcontinental Ry., Ottawa, born at Penobscus, N.B., Nov. 20, 1873.

W. L. Crighton, Advertising Agent, Canadian Government Railways, Moncton, N.B., born at Derby, Eng., Nov. 9, 1871.

A. C. Douglas, acting Assistant General Purchasing Agent, C.P.R., Montreal, born at Montreal, Nov. 10, 1881.

W. Downie, ex-General Superintendent, Atlantic Division, C.P.R., now of Whitby, Ont., born at Rock Currie, Ireland, Nov. 12, 1850.

Jos. Dubrule, jr., Manager, Canadian Pacific Car and Passenger Transfer Co., and President, Prescott and Ogdensburg Ferry Co., Ltd., Prescott, Ont., born at Spencer-ville, Ont., Nov. 14, 1872.

R. L. Fairbairn, General Passenger Agent, Canadian Northern Ry., Toronto, born at Stillwater, Minn., Nov. 24, 1880.

W. A. Fitch, Assistant Superintendent, District 3, Intercolonial Ry., Moncton, N.B., born at Kentville, N.S., Nov. 25, 1867.

P. J. Flynn, Superintendent, Districts 2 and 3, Central Division, Canadian Northern Ry., Winnipeg, born at Fishers, N.Y., Nov. 22, 1872.

J. E. Gibault, A.M. Can. Soc. C.E., Resident Engineer, District 2, National Transcontinental Ry., Cochrane, Ont., born at St. Jerome, Terrebonne County, Que., Nov. 16, 1887.

Grant Hall, Vice President and General Manager, Western Lines, C.P.R., Winnipeg, born at Montreal, Nov. 27, 1863.

John L. Hodgson, General Car Foreman, National Transcontinental Ry., Transcona, Man., born at Simcoe, Ont., Nov. 15, 1858.

N. B. Jones, Car Foreman, C.P.R., Kenora, Ont., born at St. John, N.B., Nov. 9, 1869.

W. E. Ladley, Superintendent of Motive Power, Reid Newfoundland Co., St. John's, Nfld., born at Leeds, Eng., Nov., 1875.

C. E. Legg, General Agent, Winnipeg, C.P.R., Fort William, Ont., born in Illinois, Nov. 15, 1864.

F. T. Leversuch, Traffic Manager, London and Port Stanley Ry., London, Ont., born at Shrewsbury, England, Nov. 24, 1884.



J. McGillivray, Receiver and Manager, Inverness Ry. and Coal Co., Inverness, N.S., born at Nairn, Scotland, Nov. 13, 1867.

J. McMillan, Manager of Telegraphs, C.P.R., Montreal, born at Liverpool, Eng., Nov. 8, 1869.

A. J. McNamara, General Yardmaster, Ottawa Terminals, G.T.R., Ottawa, Ont., born at Arnprior, Ont., Nov. 10, 1877.

A. S. Munro, Commercial Agent, G.T.R., London, Ont., born at Hamilton, Ont., Nov. 14, 1888.

C. Murphy, General Superintendent, Manitoba Division, C.P.R., Winnipeg, born at Prescott, Ont., Nov. 20, 1865.

A. C. O'Neil, Travelling Freight Agent, G.T.R., London, Ont., born at Point Edward, Ont., Nov. 30, 1866.

W. J. Quinlan, District Passenger Agent, Grand Trunk Pacific Ry., Winnipeg, born at Montreal, Nov. 21, 1883.

F. E. Rutland, Agent, C.P.R. Stockyards, Winnipeg, born in Essex, England, Nov. 17, 1868.

H. P. Sharpe, General Agent, Dominion Express Co., Toronto, born at Brockville, Ont., Nov. 24, 1864.

G. H. Shaw, General Traffic Manager, Canadian Northern Ry., Toronto, born at Smiths Falls, Ont., Nov. 25, 1859.

J. G. Sutherland, Car Service Agent, Alberta Division, C.P.R., Calgary, born at Aulac, N.B., Nov. 24, 1882.

L. C. Thomson, General Storekeeper, Eastern Lines, Canadian Northern Ry., Toronto, born at Kingston, Ont., Nov. 25, 1882.

H. P. Timmerman, Industrial Commissioner, Eastern Lines, C.P.R., Montreal, born at Odessa, Ont., Nov. 6, 1856.

H. E. Whittenberger, General Superintendent, Ontario Lines, G.T.R., Toronto, born at Peru, Ind., Nov. 9, 1869.

C. G. Washbon, Trainmaster, C.P.R., Brandon, Man., born at Morris, N.Y., Nov. 27, 1887.

## Orders by the Board of Railway Commissioners for Canada.

Beginning with June, 1904, Canadian Railway and Marine World has published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have filed our paper have a continuous record of the Board's proceedings. No other paper has done this.

The dates given of orders, immediately following the numbers, are those on which the orders were issued.

24191. Sept. 17.—Ordering C.P.R. to give up possession of land necessary to enable G.T. Pacific Ry. to build interchange track with C.P.R. near Globe elevator, Calgary, Alta.

24192. Sept. 20.—Authorizing St. John Ry. to cross St. John Bridge & Ry. Extension Co.'s tracks on Douglas Ave., St. John, N.B.; crossing to be protected by half interlocking plant.

24193. Sept. 21.—Authorizing Delburne Village, Alta., to build highway, between n.e. and n.w.  $\frac{1}{4}$  Sec. 21-37-23, w. 4 m., across G.T. Pacific Ry. Tofield-Calgary Branch.

24194. Sept. 21.—Approving Boston & Maine Rd. bylaw Sept. 7, re tariffs of tolls; and rescinding order 14244, July 18, 1911.

24195. Sept. 22.—Approving C.N. Ontario Ry. proposed passenger and freight stations at North Bay.

24196. Sept. 20.—Authorizing Saskatchewan Highway Commissioners on behalf of Canadian Northern Ry. to build highway crossing over station grounds at Turtleford, to be paid by C.N.R.

24197. Sept. 21.—Approving Oshawa Ry. bylaw Sept. 13, re tariffs of tolls.

24198. Sept. 13.—Ordering C.P.R. to build passenger shelter station at Hatzic, B.C., consisting of waiting room not less than 12 x 15 ft.; and office for agent; to maintain agent there during June, July, August and September each year, and during remainder of year to keep waiting room clean, heated and lighted, for passengers.

24199. Sept. 20.—Providing for cost of building Canadian Northern Ry. Birds Hill line across power transmission line and patrol road of City of Winnipeg.

24200. Sept. 20.—Approving Canadian Northern Ry. Standard Mileage Tariff C.R.C. no. W862, cancelling C.R.C. no. W793.

24201. 24202. Sept. 21, 20.—Approving London & Port Stanley Ry. plan R.C.15-56, and authorizing it to build siding to McClary's under Bell Telephone Co.'s wires; and also to cross London St. Ry. and its overhead structure at South St., London, Ont.

24203. Sept. 21.—Authorizing C.P.R. to open for traffic its Coronation Northwest Branch, mileage 0 to 18.6, Alta., speed of trains limited to 15 miles an hour over first 12 miles, and 10 miles an hour over the remainder.

24204. Sept. 21.—Authorizing C.P.R. to build spur for Graves Bigwood Co., at mileage 52.6, Sudbury Subdivision, Ont.

24205. Sept. 21.—Approving Thousand Island Ry. bylaw Sept. 13, re tariffs of tolls.

24206. Sept. 22.—Amending order 23968, July 14, re farm crossing over G.T.R. on Lot 15, Broken Front Concession, Tilbury North Tp., Ont.

24207. Sept. 22.—Authorizing Kettle Valley Ry. to open for traffic its line from mileage 31, west of Coquihalla Summit to mileage 39.53 at connection with C.P.R. near Hope, B.C.; and rescinding order 24133, August 30.

24208. Sept. 22.—Ordering C.P.R. to fence its right of way from mileage 32.5 to 32.7, Kingston Subdivision, at Folger, Ont.; and rescinding order 17667, Oct. 4, 1912.

24209. Sept. 23.—Authorizing London & Port Stanley Ry. to take Lot 1 on south side of Philip St., and Lot 1 on north side of Trafalgar St., London, Ont., for railway purposes.

24210. Sept. 22.—Extending to Oct. 15, time within which G.T.R. shall complete siding and freight shed at Ratho, Ont.

24211. Sept. 23.—Authorizing Kettle Valley

Ry. to cross C.N. Pacific Ry. at Hope, B.C., for construction purposes only, until Nov. 30, the trains to be flagged over crossing by flagman appointed by C.N.P.R. at expense of K.V.R.

24212. Sept. 24.—Approving Edmonton, Dunvegan & British Columbia Ry. revised location through Tps. 77 and 78, R. 23 and 24, w. 5 m., Alta., between mileage 286.34 and 297.24.

24213. Sept. 22.—Amending order 20621, Oct. 18, 1913, re G.T.R. siding for St. Marys Portland Cement Co., Blanshard Tp., Ont.

24214. Sept. 23.—Approving revised location of G.T. Pacific Branch Lines Co.'s Moose Jaw Northwest Branch and land required for station grounds in s.w.  $\frac{1}{4}$  Sec. 21-21-4, w. 3 m., Moose Jaw District, Sask.

24215. Aug. 21.—Authorizing Canadian Northern Ry. and Edmonton, Dunvegan and British Columbia Ry. to build interchange track at Morinville, Alta.; switches to be wire locked with distant signals.

24216. Sept. 23.—Authorizing Dominion and Ontario Governments to build highway over Canadian Northern Ry. west of Beauceage station, near North Bay, Ont., and rescinding order 24109, Aug. 19.

24217. Sept. 25.—Ordering G.T.R. to remove trees obstructing view of track at crossing of Ridge Road, Oro Tp., Ont., and to build east approach on Concession Road in accordance with Standard Regulations.

24218. Sept. 27.—Authorizing C.P.R. to build connecting track between Kootenay Central Ry. and British Columbia Southern Ry. in Lot 324, Kootenay District, B.C.; and authorizing it to cross Government Road.

24219. Sept. 27.—Authorizing C.P.R. to build road diversion in n.e.  $\frac{1}{4}$  Sec. 28-19-3, W. 2 M.; and across its Neudorf Subdivision, mileage 95.1, Sask.

24220. Sept. 24.—Authorizing G.T.R. to build extension to North American Chemical Co.'s siding, Goderich, Ont.

24221. Sept. 27.—Approving Canadian Northern Ry. crossing of May St., Port Arthur, Ont.

24222. Sept. 27.—Authorizing G.T.R. to build siding with spur for Empire Sand, Gravel & Crushed Stone Co., on Lot 22, Con. 3, Vaughan Tp., Ont.

24223. Sept. 27.—Approving location of C.P.R. proposed shelter station at Moredolphton, Ont.

24224. Sept. 27.—Authorizing Dominion Atlantic Ry. to build bridge over Little Joggins River, Digby County, N.S.

24225. Sept. 28.—Approving Kettle Valley Ry. Standard Passenger Tariff of Sleeping and Parlor Car Tolls, C.R.C. no. S-2.

24226. Sept. 27.—Authorizing Quebec Oriental Ry. to rebuild overhead highway bridge at mileage 64 on R. 5, Richmond tp.

24227. Sept. 27.—Approving Canadian Northern Ry. bylaw re tariffs of tolls for all passenger traffic that may be carried on its system, excepting to and from points west of Port Arthur and West Port.

24228. Sept. 27.—Ordering Canadian Northern Ry. to build farm crossing at station 268-50, on s.w.  $\frac{1}{4}$  Sec. 25-53-8, w. 5 m., at mileage 75 west of Edmonton, Alta.

24229. Sept. 28.—Amending order 24175, Sept. 15, re C.P.R. extension to siding for Cataract Jct. Sand & Gravel Co., Cataract Jct., Ont.

24230. Sept. 28.—Amending order 24203, Sept. 21, re opening for traffic of C.P.R. Coronation Northwest Branch, Alberta.

24231. Sept. 28.—Authorizing C.P.R. to build sidings for Canadian Explosives, Ltd., at Nobet, Ont.

24232. Sept. 28.—Authorizing C.P.R. to build sidings for Aetna Chemical Co. of Canada, Ltd., at Drummondville, Que.

24233. Sept. 28.—Ordering C.P.R. to install hand operated gates, known as "jackknife" style, at crossing of Talbot Ave., Winnipeg; to be operated by day and night watchmen; cost of installation and maintenance to be paid by City of Winnipeg.

24234. Sept. 28.—Amending order 24168, Sept. 3, re G.T. Pacific Ry. road diversion in Saskatchewan.

24235. Sept. 28.—Ordering London & Port Stanley Ry. within 60 days to install improved type of automatic bell at first crossing north of Port Stanley, Ont., 20% of cost to be paid out railway grade crossing fund.

24236. Sept. 27.—Dismissing London, Ont., Board of Trade's complaint against alleged discrimination shown in favor of Toronto in express charges from that city as compared with those charged from London, Ont.

24237. Sept. 29.—Authorizing C.P.R. to build highway to connect west and north boundaries of Sec. 21-20-7, and to connect south boundary Sec. 29-20-7, w. 2 m., Sask., and east boundary Sec. 29; and to build one square level highway crossing at mileage 122.1, Neudorf Subdivision, in lieu of crossing of above mentioned road allowance which crossings are to remain closed.

24238. Sept. 27.—Authorizing Canadian Northern Ry. to build spur for Premier Coal Co., Drumheller, Alta.

24239. Sept. 29.—Dismissing complaint of N. J. Epstein, Montreal, against Bell Telephone Co. re treatment in connection with account for long distance calls.

24240. Sept. 28.—Authorizing C.N. Ontario Ry. to open up Second Concession road allowance over its right of way in Goulburn Tp., to be completed by Oct. 31.

24241. Sept. 27.—Dismissing Canadian Manufacturers' Association's complaint that railway companies insist on charging 4th class rate on salted meats, in carloads, instead of 5th class.

24242. Sept. 30.—Refusing D.G. Mathias' application for rate of \$1.10 on dried fruit from San Francisco, Cal., to Fort William, Ont.

24243. Oct. 1.—Recommending to Governor in Council for sanction, lease between C.P.R. and Shuswap & Okanagan Ry. Co., Aug. 9.

24244. Sept. 30.—Amending order 24031, July 19, re operation of interlocking plant near Diltz, Moncton Tp., Ont., by G.T.R. and Toronto, Hamilton & Buffalo Ry.

24245. Oct. 1.—Authorizing Lake Erie & Northern Ry. to operate for construction purposes only, over crossing of G.T.R. at station 7-23, Brantford, Ont., for six months from date.

24246. Oct. 1.—Authorizing Michigan Central Rd. to build siding for Norton Co., Chippewa, Ont.

24247. Sept. 23.—Authorizing Lochill Tp., Ont., to build highway crossing over G.T.R. at road allowance between Lots 17 and 18, Con. 2, to be completed within 60 days from date, to be paid by G.T.R.

24248. Oct. 1.—Authorizing C.P.R. clearance between tracks and operator's window at Winnipeg, Man.

24249. Oct. 1.—Authorizing C.P.R. to build siding for F. Canac-Marquis, Quebec, Que.

24250. Oct. 1.—Authorizing C.P.R. to build extension to siding of Austin & Nicholson, mileage 24.1, White River Subdivision, Ont.

24251. Sept. 28.—Ordering C.P.R., G.T.R., and C.N. Ontario Ry. to prohibit whistling by those in charge of any locomotive operating within Toronto city limits; whistling to be allowed only where deemed necessary by those in charge, as a danger signal; any person offending against this regulation to be liable to penalty of \$10 for each offence, and rescinding order 24062, Aug. 3.

24252. Sept. 29.—Amending order 24206, Sept. 22, re farm crossing over G.T.R. on Lot 15, Broken Front Concession, Tilbury North Tp., Ont.

24253. Oct. 1.—Relieving G.T. Pacific Branch Lines Co. from erecting fences, gates and cattle-guards on certain portions of its Biggar-Calgary Branch, mileage 0 to 104, Sask.

24254. Oct. 2.—Approving Canadian Northern Ry. Standard Passenger Tariff, C.R.C. no. W-1283, showing rate of 3c a mile, Edmonton to and including Tollerton, Alta., and 4c a mile west of Tollerton, to and including Vancouver, B.C.



24255. Sept. 30.—Ordering Halifax & South Western Ry. to replace board along tops of posts, or string new wire in lieu of board on fence along right of way from Lower Argyle, to Argyle, N.S., mileage 223.9 to 229.3, to be completed by Nov. 30.

24256. Sept. 28.—Authorizing C.N. Ontario Ry. to cross Timiskaming & Northern Ontario Ry. at North Bay, Ont.; C.N.O.R., under supervision of T. & N.O.R. engineer, to insert diamonds in T. & N.O.R. tracks; crossing to be protected by interlocking plant; derails and home and distant signals to be placed on both lines on each side of crossing; derails to be interlocked with signals; normal position of signals to be at danger.

24257. Sept. 30.—Amending order 23864, June 15, re watchman at Erie & Ontario Ry. (T.H. & B.R.) and M.C.R. crossing at Attercliffe, Ont.

24258. Oct. 2.—Authorizing residents of Fallis, Alta., to build highway over G.T. Pacific Ry., 200 ft. east of Main St.

24259. Sept. 30.—Authorizing Canadian Northern Ry. to remove regular agent at Laframboise station, Ont., station to be kept clean and heated for passenger accommodation.

24260. Oct. 4.—Authorizing Canadian Northern, Alberta Ry. to open for traffic its line from St. Albert to summit of Yellowhead Pass, 251 miles.

24261. Oct. 4.—Authorizing Canadian Northern Ontario Ry. to build spur for National Explosives, Ltd., and to cross side track between Lots 30 and 31, Con. A. Tyendinaga Tp.

24262. Oct. 4.—Authorizing Bank of British North America, Hamilton, Ont., to pay to G.T. R. \$2,526.40, and balance of \$5,000 deposited to the Board's credit, viz., \$2,473.60, together with accrued interest, to Hamilton and Toronto Sewer Pipe Co.

24263. Sept. 30.—Ordering G.T. Pacific Ry. to fence ballast pit, in Souris River valley, on its Regina-Boundary Branch, by Oct. 31.

24264, 24265. Oct. 4.—Authorizing Lake Erie Northern Ry. to build, at grade, across Machanic, and across Leonard Streets, Watford, Ont.

24266. Oct. 4.—Amending order 24030, July 28, re operation of interlocking plant by Toronto, Hamilton & Buffalo Ry. and G.T.R., at Dunnville, Ont.

24267. Oct. 4.—Authorizing Village of Rock Island, Que., to build highway crossing over Boston and Maine Rd., and to open public highway from Morel and Tilton Sts., making a 40-ft. roadway.

24268. Oct. 4.—Approving plan and specifications by Southwold Tp., Ont., of Braddon drain under Lake Erie & Detroit River Ry., (P.M.R.) between Talbot Road and its north branch.

24269. Oct. 4.—Authorizing Three Rivers Traction Co., (Shawinigan Water & Power Co.), to cross C.P.R. loop line at St. Maurice St., Three Rivers, Que., its cars to be flagged over crossing.

24270. Oct. 5.—Authorizing C.P.R. to carry traffic over its Stirling East Branch, mileage 49.2 to 74.5, Alta., until Dec. 31, speed limited to 15 miles an hour.

24271. Oct. 4.—Authorizing Fort Garry Rural Municipality, Man., to build highway crossing over Canadian Northern Ry. at Clarence Ave.

24272. Oct. 5.—Approving revised location G.T. Pacific Branch Lines Co.'s Biggar-Calgary Branch through s. 1/2 Sec. 10-35-17, w.3.M. Sask.

24273. Oct. 5.—Authorizing London—Port Stanley Ry. to build siding across St. Thomas Street Ry. at Wellington St., St. Thomas, Ont.

24274. Oct. 6.—Extending 15 days from date time within which G.T.R. shall install derail at siding at Killaloe, Ont.

24275. Oct. 6.—Ordering that cost of building and maintaining crossing of First St. North across Canadian Northern Ry., west of west switch at Dummer, Sask., be paid by Caledonia rural municipality 99.

24276. Oct. 7.—Amending order 24171, Sept. 11, re crossing of G.T.R. near Dixville station, Que.

24277. Oct. 5.—Dismissing complaint of B.J. Ostrander & Co., Winnipeg, Man., that railway companies refuse to divert cars containing grain from one lake front elevator to another after cars have reached yards at lake front.

24278. Oct. 4.—Authorizing St. Michel de Vaudreuil Parish, Que., to build highway over C.P.R. at l'Île Cadieux, switchstand to be moved back 30 ft., cost of same, not exceeding \$200, to be paid by applicant.

24279. Oct. 5.—Ordering that half interlocking plant to be installed at crossing on Douglas Ave., St. John, N.B., be operated by watchman operating gates; wages to be paid divided by St. John Ry. and C.P.R.

24280. Oct. 5.—Authorizing G.T. Pacific Ry. to build spur for Great West Coal Co. in n.e. 1/4 Sec. 6, and s.e. 1/4 Sec. 7-53-23, w.4.m., North Alberta District.

24281. Oct. 5.—Relieving G.T. Pacific Branch Lines Co. from erecting fences, gates and cattleguards on certain portions on its Battleford Branch, Sask., between mileage 0 and 48.5.

24282. Oct. 5.—Relieving G.T.R. from providing further protection at Queen St., Penetanguishene, Ont.

24283. Oct. 7.—Ordering that, owing to exigencies of movement of explosives during the war, the G.T.R. and C.P.R. build interchange

track at west end of Vaudreuil bridge cost to be paid by G.T.R.; track to be built within 30 days and removed when war is over.

24284. Oct. 8.—Authorizing Consolidated Mining & Smelting Co. of Canada to build tunnel under C.P.R., in its yard, between smelter and new zinc plant at Trail, B.C., detail plans of structure to be submitted for approval of the Board and C.P.R.

24285 to 24292. Oct. 5, 6.—Approving Bell Telephone Co.'s agreement with Warwick Telephone Co., Aug. 27, Schomberg Telephone Co., Sept. 29, Widdifield Tp., Sept. 7, Prescott Rural Telephone Co., Aug. 30, Colborne Tp., Sept. 1, Russell Rural Telephone Co., Sept. 1, Belmont Telephone Co-operative Association, Sept. 24, and Mount Forest, Wellington & Grey Telephone Co., Sept. 17.

24293. Oct. 5.—Authorizing London and Port Stanley Ry. to build siding across St. Thomas Street Ry. siding at Wellington St., St. Thomas, Ont.

24294. Oct. 7.—Authorizing C.P.R. to build spur for Canadian Explosives, Ltd., on Lot 182, Ste. Jeanne de l'Isle Perrot Parish, Que., to be completed within 3 months.

24295. Oct. 7.—Approving specifications and plans of Big Creek drain, in so far as they affect lands of Canada Southern Ry. (M.C.R. and C.P.R.) in Tilbury North Tp., Ont.

24296. Oct. 9.—Approving location and details of Montreal & Southern Counties Ry. proposed station at Abbotsford, Que.

24297. Oct. 9.—Authorizing C.P.R. to build spur and siding for J. Brodie & Son, at mileage 121.8, Laurentian Subdivision, Que.

24298. Oct. 9.—Amending order 24216, Sept. 23, re Dominion and Ontario Governments highway over Canadian Northern Ry. at Beaucage station, near North Bay, Ont.

24299. Oct. 9.—Amending order 24219, Sept. 27, re C.P.R. road diversion at mileage 95.1, Neudorf Subdivision, Sask.

24300. Oct. 9.—Authorizing Dominion Atlantic Ry. to use bridge over Little Joggins River, Digby County, N.S.

24301. Oct. 13.—Authorizing British Columbia Government to build highway crossing over G.T. Pacific Ry. west of west switch at Vanarsdol.

24304. Oct. 6.—Authorizing Toronto Hydro-Electric System to erect wires across G.T.R. at corner of Carlaw Ave. and Gerrard St.

24305. Oct. 12.—Relieving Michigan Central Rd. from providing further protection at Park St. crossing, east of St. Thomas, Ont.

24306. Oct. 12.—Authorizing G.T. Pacific Branch Lines Co. to carry traffic over portion of its Cutknife Branch, Battleford, mileage 0 to 50, Sask.; speed limited to 15 miles an hour; and rescinding order 20513, Oct. 7, 1913.

24307. Oct. 12.—Approving Canadian Northern Ry. Standard Tariff of Sleeping and Parlor car tolls, C.R.C. no. S-2.

24308. Oct. 9.—Authorizing C.P.R. to build siding for Corrugated Paper Co., North Toronto.

24309. Oct. 9.—Authorizing C.P.R. to build highway across its Neudorf Subdivision, Sask., at two points, at mileage 9.5 and mileage 69.9, and to close portion of road allowance along n.e. 1/4 and east boundaries of Sec. 11, which lies within limits of railway right of way.

24310. Oct. 9.—Relieving G.T. Pacific Branch Lines Co. from erecting fences, gates and cattleguards on its Tofteld-Calgary Branch, Alta., mileage 11.36 to 194.39.

24311. Oct. 15.—Extending to Nov. 30, time within which C.P.R. shall complete branch for Empire Waterworks Supply Co. of Canada, Victoria, B.C.

24312. Oct. 14.—Authorizing G.T.R. to build sidings and spurs, to serve Toronto and Hamilton Highway Commission, along and across certain highways in Port Credit, and extending to Port Credit Land Co.'s premises, leased to the Commission.

24313. Oct. 16.—Suspending, pending hearing by Board, advanced rates on apples and potatoes to Halifax for export, as published in Dominion Atlantic Ry. Tariffs, C.R.C. 454 and 455, to become effective Oct. 25.

24314. Oct. 15.—Authorizing British Columbia Public Works Department to build highway crossing over G.T. Pacific Ry. east of east switch at Usk.

24315. Oct. 15.—Ordering Toronto, Hamilton and Buffalo Ry. to provide farm crossing, with gates, for T. Embury, Jerseyville, Ont., applicant to do grading and pay \$10 toward cost.

24316. Oct. 15.—Ordering Campbellford, Lake Ontario & Western Ry. (C.P.R.) to build farm crossing for E.H. Armstrong, Camden Tp., Ont., half cost, excepting gates, to be paid by applicant.

24317. Oct. 15.—Authorizing Town of Radville, Sask., to build highway crossing over Canadian Northern at First St. East, crossing between Sec. 7-6-17, and Sec. 12-6-18, w.2.m., to be closed, cost of maintaining crossing to be paid by C.N.R.

24318. Oct. 15.—Approving agreement between Bell Telephone Co. and Southwold & Dunwich Telephone Association, Ltd., Sept. 7.

24319. Oct. 15.—Authorizing Canadian Northern Ontario Ry. to open for traffic its line from Pembroke to Capreol; and from Ruel to Port Arthur.

24320. Oct. 18.—Authorizing G.T.R. to build

siding for Toronto Furniture Co., Mowat Ave., Toronto, and approving clearances there.

24321. Oct. 16.—Ordering Michigan Central Ry. to build proper approach to station at Shedden, Ont., from north and south.

24322. Oct. 16.—Authorizing Canadian Northern and C.P.R. to operate over crossing in n.w. 1/4 Sec. 13-2-8, w.2.m., Sask., without first stopping.

24323. Oct. 16.—Dismissing application of L. H. Congreave, Sicamous, B.C., for order directing C.P.R. to designate suitable place on platform for receiving guests for his hotel.

24324. Oct. 15.—Ordering C.P.R. to install improved type automatic bell at crossing in Mono Road, Ont., and to maintain bell; work to be completed as soon as weather conditions permit in spring; 20% of cost to be paid out of railway grade crossing fund.

General Order No. 149, Sept. 14.—Approving terms and conditions of telephone connection by Bell Telephone Co., with municipal corporations, independent telephone companies or systems.

### Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1914-15, from July 1, 1915:

	Gross Earnings	Expenses	Net Earnings	Increase or Decrease
July	\$1,296,100	\$921,000	\$375,100	x\$145,400
Aug.	1,192,800	864,000	328,800	x3,000
Sept.	2,014,600	1,358,900	661,600	1,900
	\$4,413,600	\$3,227,000	\$1,186,600	x\$79,300
Decr.	x\$658,300	\$579,000	\$79,300	.....

Mileage in operation at Sept. 30, 1915, 4,965, against 4,670 at Sept. 30, 1914.

Commencing with Oct. 1, the figures quoted represent the earnings of the entire system instead of those of the western lines only.

Approximate earnings of the system for three weeks ended Oct. 21, \$2,407,100, against \$1,871,390 for same period 1914.

### Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1914-15, from July 1, 1915:

	Gross Earnings	Expenses	Net Earnings	Increase or Decrease
July	\$7,895,375.47	\$5,094,972.35	\$2,800,403.12	x\$978,042.71
Aug.	8,801,451.52	5,359,136.80	3,442,314.72	79,157.02
	\$16,696,826.99	\$10,454,109.15	\$6,242,717.84	x\$888,886.69
Dec.	\$3,702,909.11	\$2,804,023.42	\$898,885.69	.....

xDecrease.

Approximate earnings for September, \$9,995,000, and for three weeks ended Oct. 21, \$3,971,000, against \$10,479,000 and \$6,539,000 respectively for same periods in 1914.

### Grand Trunk Railway Earnings, Etc.

The following figures show the earnings for the G.T.R. (including the Canada Atlantic Ry.), the G.T.W.R. and the D.G.H. & M.R. from Jan. 1 to Sept. 30:

	1915	1914	Incr	Decr.
G.T.R. ....	\$29,451,739	\$32,029,026	.....	\$2,577,287
G.T.W.R. ....	5,458,739	5,358,626	\$100,113	.....
D.G.H. & M.R. ....	1,978,379	1,852,241	126,138	.....

Totals .... \$36,888,857 \$39,239,893 ..... 2,351,036

Approximate earnings for September, \$4,605,041, and for three weeks ended Oct. 21, \$3,130,733, against \$4,671,561 and \$2,990,076 respectively for similar periods in 1914.

### Grand Trunk Pacific Railway Earnings

The approximate earnings of the Prairie Section, 916 miles, for September were \$403,888 against \$506,012 for Sept., 1914. Aggregate earnings for three months ended Sept. 30, \$884,976, against \$1,213,073 for same period 1914.

### Railway Lands Patented.—Letters patent

were issued respecting Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, during September, as follows:

	Acres
Calgary and Edmonton Ry. ....	480.00
Canadian Pacific Ry. ....	342.158
Edmonton, Dunvegan and British Columbia Ry. ....	60.67
Grand Trunk Pacific Branch Lines Co. ....	6.38
Qu'Appelle, Long Lake and Saskatchewan Rd. and Steamboat Co. ....	1,920.00

Total ..... 2,809.208



## Canadian Pacific Railway Company's Annual Meeting.

The 34th annual meeting was held at Montreal, Oct. 6. Sir Thos. G. Shaughnessy, President and Chairman of the company, who presided, in moving the adoption of the report which was printed in Canadian Railway and Marine World for September, said:

The annual statement of your affairs now before you for consideration and approval is, in some respects, the most unsatisfactory that has been submitted for a number of years past. The shrinkage of \$31,000,000 in the gross earnings of your railway system as compared with the previous year is very marked; indeed it is in excess of your entire gross earnings in the year 1901, but the fact that notwithstanding this great falling off in revenue your regular dividend was earned is unquestionable evidence of your foresight and wisdom in having made such expenditures during the past 10 or 12 years as to enable you to make a saving in your working expenses representing such a substantial offset to the loss of gross revenue.

The physical condition of your property has never been better than it is at this time, the reduction in the cost of maintenance of way for the year being due very largely to a favorable winter and to the fact that works of betterment, chargeable in considerable part to working expenses, were completed before unfavorable business conditions appeared, and the additional facilities for the conduct of your business provided by your expenditures made it possible for you to handle your traffic more expeditiously and economically. As an illustration, the number of tons of freight traffic hauled one mile in the year covered by the report was 22% greater than in 1905, but it required only 17% additional train miles to perform the service. Improved gradients, double tracks, better terminal facilities, larger locomotives and cars, enabled you to earn \$3.17 per freight train mile in the last year as against \$1.93 in 1905, an improvement of 64%, although there had been a substantial reduction of freight rates in the meantime. Taking everything into account I feel that we may accept the outcome of the year as evidence of the strongly entrenched position of the company, and may look forward to the future with buoyant confidence.

In these days, when so many nations are engaged in a bloody and expensive war, when the financial machinery of the world is out of gear and general business conditions are disturbed, it is not wise to make predictions, but everything points to marked improvement in your revenue during the current fiscal year. The country has been blessed with a most bountiful harvest, and while the price of wheat is lower than it was a year ago it is still above the average, and conditions prevailing abroad should cause a continued demand for this and many of our other products. Conservatively estimated, the field crops harvested this autumn in the four provinces west of Lake Superior will yield per capita to the rural population in these provinces more than twice as much money as the rural population of the eight states directly south of them received per capita for their field crops in 1914. With agriculture as the most important pedestal of our prosperity any substantial addition to the income, and therefore to the buying power of the agricultural community, is reflected in every line of trade, so that we have reason to anticipate a decided betterment of the westbound merchandise traffic.

A substantial improvement in your land sales, 77,000 acres in the last three months as compared with 41,000 acres in the same months last year, increased activity in the

mining and smelting industries of Southern British Columbia, larger shipments of lumber from the western mills to the interior, are all encouraging signs, indicating as they do a partial restoration of confidence and a step in the direction of normal times.

It is to be hoped that in anticipation of the close of the war and the new conditions that will come with it, an organization will be perfected for unity of action by the Dominion and provincial governments and the important business interests of the country, looking not only to the largest possible immigration of agriculturists, but to the development, on a more comprehensive scale than ever before, of the vast natural resources of the country, so that the position of Canada may be strengthened to meet the financial obligations of the country resulting from the war and from other causes with which everybody is familiar.

Until the market improves no special effort will be made to dispose of any portion of the 4% consolidated debenture stock, amounting to about \$40,000,000, representing advances made from your treasury for the construction of additional railway mileage, as there is in hand at present sufficient money to meet all your requirements for a considerable period.

The company has suffered severe loss by the death of two of its most valued and esteemed directors. Sir Sandford Fleming, who died July 22, was associated with the Canadian Pacific before the organization of the present company, as Chief Engineer of the Dominion Government, and he became a member of the board of directors of the company in 1885. He attended the meetings of the board with great regularity and took keen interest in the company's affairs until he was seized with the illness that finally proved fatal.

Sir William Van Horne, who passed away Sept. 11, joined the company as General Manager at the end of 1881, and from that time until he retired from the Presidency in 1899 he devoted himself to the administration of the company's affairs with a whole heart and with unbounded confidence. During the period that the through line of railway was under construction and when its early completion was a matter of vital importance, his energy, ability and indomitable courage were of a value that could not be over estimated. He lived to see the enterprise attain proportions quite beyond the most ambitious anticipations of the earlier days. The shareholders as well as his associates on the board of directors will, I am sure, always cherish his memory.

A resolution was passed authorizing the transfer to the Canadian Pacific Ocean Services, Ltd., of the C.P.R. Co.'s holding of shares in the Allan Line Steamship Co., Ltd., and of the C.P.R. Atlantic and Pacific ocean fleets. It is given in full in the Marine Department, farther on in this issue.

It having been announced that three directors, R. B. Angus, Sir Edmund Osler and Sir Herbert Holt retired in rotation and that the vacancy caused by Sir William Van Horne's death required to be filled, the three retiring directors were re-elected for four years and Brigadier General F. S. Meighen, President Lake of the Woods Milling Co., was elected for the same period. The vacancy caused by Sir Sandford Fleming's death was not filled.

The board met immediately after the shareholders' meeting and re-elected Sir Thos. G. Shaughnessy President, and George Bury, Vice President. The following were

appointed as the Executive Committee: R. B. Angus, George Bury, Sir Herbert Holt, Sir Edmund Osler, Sir Thos. G. Shaughnessy.

## Railway Rolling Stock Notes.

The G.T.R. has received 3 automobile cars from its Elsdon, Ill., shops.

Canadian Government Railways have received 10 consolidation locomotives from Canadian Locomotive Co.

The Canadian Northern Ry. has received 7 first class, steel underframe, passenger cars from Canadian Car and Foundry Co.

Canadian Government Railways, between Sept. 14 and Oct. 18, received the following additions to rolling stock: 288 box cars from Canadian Car and Foundry Co.; 188 box cars from National Steel Car Co.; 46 steel flat cars from Nova Scotia Car Works; 11 consolidation locomotives from Canadian Locomotive Co., and one 100 ton wrecking crane from F.H. Hopkins and Co.

Since the commencement of the operation of the National Transcontinental Ry. by the Canadian Government Railways, considerable Intercolonial Ry. rolling stock has been transferred for N.T.R. use. We are officially advised that up to Oct. 11 the following had been so transferred: Locomotives, 52 consolidation, 9 ten-wheel, 10 Pacific, 6 switching and 5 eight-wheel; 41 passenger cars, 2 baggage cars, 3 box-baggage cars, 40 vans, 16 boarding and cook cars, 30 cinder cars, 17 flat cars and 2,050 box cars.

The Union Government of South Africa has ordered 2 steel under frame flat cars for its railways from Canadian Car and Foundry Co. They will be equipped with standard type diamond arch bar trucks, and each car will be fitted with 6 drop bottom coal delivery buckets each of 7 tons capacity. Following are chief details:

Gauge .....	3 ft. 6 ins.
Capacity .....	60 tons
Length over end sills .....	40 ft.
Width over side sills .....	7 ft.
Width over floor .....	8 ft.
Height from rail to floor .....	3 ft. 7½ ins.
Top of rail to centre of drawbar ..	2 ft. 11 ins.
Truck centres .....	26 ft.
Wheel base .....	5 ft. 3 ins.

**Transfer of Quebec and Saguenay Ry. Foreshadowed.**—Sir Rodolph Forget, M.P., was credited with having stated at the Quebec Railway, Light, Heat & Power Co.'s annual meeting in September that he expected to make an announcement shortly thereafter in regard to the sale or transfer of the Quebec & Saguenay Ry. Press reports have since foreshadowed that the line would be taken over either as part of the Canadian Government Railways system or by the Canadian Northern Ry., but up to October 20 no announcement had been made by Sir Rodolph. We were, however, informed on that date by his office that he had left with the Minister of Railways and Canals, and with the General Manager of the Canadian Government Railways, for a tour of inspection of the Quebec & Saguenay Ry. and of all the other subsidiary companies of the Quebec Railway, Light, Heat & Power Co.

**Right of Way at Crossings.**—The Quebec Court of Review has decided that railways have the superior right of way at unprotected crossings. The decision was given in an appeal by the G.T.R. against an award of damages for an accident at a railway crossing near St. Johns, in which two men were killed. The lower court awarded \$7,000 damages in one case and \$5,000 in the other, but the Court of Review held that the persons driving should have "stopped, looked and listened."



### Changes in Canadian Pacific Railway's Ottawa—Toronto Service.

The C.P.R., with the introduction of new time tables on Nov. 1, will inaugurate a new Ottawa-Toronto service by the addition of two new trains to run from the Grand Trunk Central Station at the intersection of Sparks and Rideau Streets, Ottawa. The new service, which will be daily except Sunday, will consist of a train, "The York," leaving Ottawa at 1.15 p.m. and reaching Toronto Union Station at 9.30 p.m. The east bound train, "The Rideau," will leave Toronto Union Station at 1.45 p.m. reaching Ottawa at 10 p.m. These trains will run over the Lake Ontario shore line between Agincourt and Glen Tay, over the Toronto-Montreal main line between Glen Tay and Kempton and over the Prescott subdivision between Kempton and Ottawa. The equipment will consist of baggage car, smoking car, first class car and library observation car with a broiler service.

The ordinary morning train for Toronto will leave Ottawa Central Station at 9.35 daily, going over the Interprovincial Bridge and through Hull, leaving Broad St. Station, Ottawa, at 10 a.m. and running via Carleton Place to Smiths Falls, where it will connect with "The Canadian," from Montreal, running via the Lake Ontario shore line from Glen Tay, and reaching Toronto Union Station at 6 p.m. It will also connect at

Falls will arrive at Ottawa Central Station at 7.40 a.m. via Kempton.

There will also be a greatly improved service between Ottawa and Kingston, two trains daily each way, leaving Ottawa 9.35 a.m., via Carleton Place, Smiths Falls and Tichborne, reaching Kingston at 2.30 p.m.; also leaving Ottawa Central Station at 1.15 p.m. via Kempton, Smiths Falls and Tichborne, reaching Kingston at 8.45 p.m. From Kingston there will be a train leaving at 10.45 a.m. via Carleton Place, reaching Ottawa at 5.40 p.m. and another leaving Kingston at 5.40 p.m. via Kempton reaching Ottawa at 10 p.m. The Ottawa-Kingston trains in both directions will use the Ottawa Central Station.

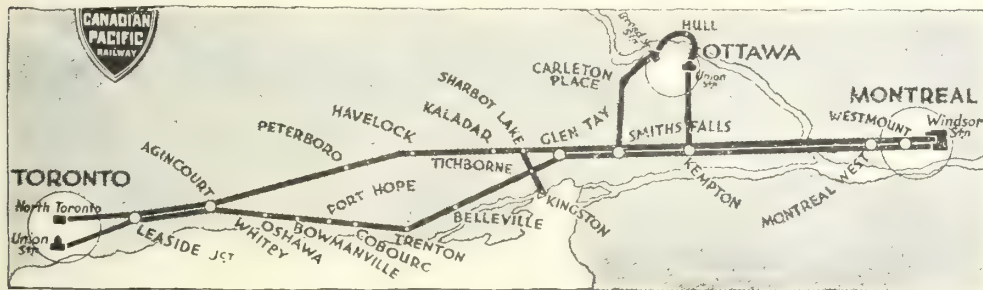
### Inverness Railway and Coal Company's Receivership.

The following circular was issued by the bondholders' committee—J.H. Plummer, President, Dominion Steel Corporation; Z. A. Lash, Senior Counsel, Canadian Northern Ry.; and D.B. Hanna, Third Vice President, Canadian Northern Ry., Oct. 7:—

A meeting of the bondholders of Inverness Railway & Coal Co. was held in accordance with the notice calling same, at the office of the company, Toronto, on June 30, at which W.E. Rundle, General Manager, National Trust Co., Ltd., occupied the chair. Substantially more than 5% of the bonds were represented at the meeting. Repre-

In the absence, therefore, of a definite plan by which the bondholders could now see their way to an ultimate solution of the company's financial problems, it was not considered advisable to authorize the creation of prior lien securities, or to pass any of the resolutions referred to in the notice convening the meeting, but in view of the disastrous effect the closing down of the mine would have on the company's properties, the trustees were instructed to apply in Nova Scotia for the appointment of a Receiver and Manager to continue operations till further order and a committee of bondholders was appointed to advise with the trustees respecting any matters which may arise in connection with the receivership and management, or with the duties of the trustees or the course of action which they should take. J. McGillivray, Inverness, N.S., was on July 6 appointed Receiver and Manager by the Nova Scotia court. It is anticipated that the operations of the company will meet expenses during the continuance of operations. The committee will issue further statements for the information of the bondholders as occasion may require.

**Alleged Claim Against the C.P.R.**—Controller Hebert asked the Montreal Board of Control, Oct. 5, to direct an enquiry to be made by the City Solicitor into the question of an alleged indebtedness of the C.P.R. to the city of \$600,000, under an agreement of 1893, and of \$25,000 for repairs on streets used by the railway. The first claim arises out of the taking over of the old Quebec, Montreal, Ottawa and Occidental Ry., and the erection of the Place Viger Station and Hotel. In 1901 a claim was made that the company had not lived up to its obligations, and the matter was apparently settled in 1903 by a report of a special committee covering a report of the then City Solicitor that the money could not be recovered. The company then claimed that it had done more than it was obliged to do under the agreement. No details are given respecting the \$25,000 claim. The matter is still under consideration.



Canadian Pacific Railway Routes between Toronto, Ottawa and Montreal.

Smiths Falls with train 35 from Montreal going via Peterboro and reaching Toronto Union Station at 6.25 p.m.

There will be two east bound morning trains for Montreal, one leaving Toronto Union Station at 8.50 a.m. daily except Sunday, via Peterboro, and the other leaving Toronto Union Station at 9.15 a.m. daily over the Lake Ontario shore line. The Ottawa passengers from these two trains will be carried on a train leaving Smiths Falls at 3.45 p.m. running via Carleton Place, reaching Broad St. Station, Ottawa, at 5.15 p.m. and Ottawa Central Station at 5.40 p.m.

At night the Ottawa-Toronto train no. 33, which now leaves Broad St. Station, Ottawa, will leave Ottawa Central Station daily at 11.10 p.m., reaching Kingston at 12.10 a.m. and there being consolidated with the Montreal-Toronto trains reaching Toronto Union Station via Peterboro at 7.20 a.m. and North Toronto at 8 a.m. and via the Lake Ontario shore line reaching Toronto Union Station at 7.35 a.m. The Toronto-Ottawa train no. 34, which now leaves Toronto Union Station at 11.10 p.m., will leave at 11 p.m. daily, running via Peterboro to Smiths Falls, where it will take on Ottawa sleeping cars from train 24 leaving North Toronto at 10 p.m. for Montreal via Peterboro, and will also take on Ottawa sleeping cars from train 22 which will leave Toronto Union Station for Montreal via the Lake Ontario shore line at 11.30 p.m. instead of 11.40 as at present. The consolidated train no. 34 from Smiths

representatives of the company addressed the meeting and pointed out that the company was and had been unable to meet its obligations in respect of its bonds for the following reasons:—There is insufficient market for coal of the quality produced; there is much slack in the coal produced, only a portion of which could be marketed at the time; high boat freights, resulting from war conditions, has restricted the present market for the company's output to Nova Scotia and New Brunswick or to local consumption.

The company has been investigating processes whereby its slack coal could be converted into saleable briquettes, but its efforts in that direction have so far been unsuccessful. A representative of the company was, at the outbreak of the war, making investigations in Austria, where the briquetting of coal is carried on successfully, but such investigations were necessarily terminated at the commencement of hostilities, and similar investigations in Great Britain, where experiments were being conducted in the same direction, had also to be abandoned for the same reasons. A survey and investigation of the coal deposits on the properties controlled by the company has been made, but such survey does not disclose coal of a higher quality than that which the company is at present mining, and until a solution of the difficulty of making saleable briquettes has been found, further expenditures in the development of other coal areas would not be warranted.

**National Transcontinental Ry. Shops for Munition Works.**—In speaking before the Canadian Manufacturers' Association's Montreal branch, Oct. 10., D.A. Thomas, representative in Canada of the British Minister of Munitions, said, among other things: "The Dominion Government had placed the National Transcontinental Ry. shops at the disposal of the Government for making shells at cost price. I take this opportunity of thanking the Canadian Government for the spirit shown in placing these shops at our disposal. We understand that some shells are already being made at the National Transcontinental shops at Transcona, Man., and that it is possible some will be made at the Intercolonial shops at Moncton. The National Transcontinental shops at Quebec are not yet completed."

**Toronto Terminals Ry. Co.**—Work is in progress on the site of the new union station in Toronto, gangs of men having started cleaning up Oct. 4. A statement that the work will be continued until completed is reported to have been made by J.R.M. Ambrose, Chief Engineer in charge of the work. The building is expected to be ready for the steel workers Mar. 1, 1916; to be ready for occupation in 1917, and to be finally completed in the following year. (Oct., pgs. 384 and 393).

**Railway Construction in South Africa.**—The South African Premier stated recently that since the formation of the Union Government there, 1,449 miles of railway had been built to July 31, 1915, and that by the end of the current year a further 950 miles would be completed.



## Grand Trunk Pacific Railway Company's Annual Meeting.

At the adjourned annual meeting in Montreal, Oct. 12, the President, E.J. Chamberlin, stated that as the railway was nearing completion construction work during the past year had been confined to necessary ballasting and bridges, principally on the Mountain Division, and no new extensions had been undertaken. In consequence of the adoption of fuel oil for locomotives between Prince Rupert and McBride, oil fuel plants had been completed at Jasper, McBride, Prince George, Endako, Smithers, Pacific and Prince Rupert, the last mentioned including plant for unloading from ships and loading cars for shipment inland. The oil dock at Prince Rupert and the bridge across the yard to the fuel oil tanks were also completed. The passenger train service between Edmonton and Prince Rupert was increased during the past season in consequence of the increasing travel, especially in connection with the exposition at San Francisco. In connection with the great development which is taking place in Alaska in consequence of the railway construction undertaken by the United States Government, the G.T.R. is rapidly becoming recognized as the route of quickest access to that section of the continent more or less remote from the eastern and central portions of the country, as it can be reached by the new railway within at least 48 hours less time than is required in travelling via any other route. This feature was also utilized immediately following the completion of the railway by the large fishery industries operating in North Pacific waters. Prince Rupert is the centre of very large fisheries which have scarcely begun to be developed because of the lack hitherto of adequate transportation facilities. These have been provided by the construction of the G.T.P.R., and tons of fish are being transported daily over the new line to the eastern markets of Chicago, Montreal, Boston, New York and Philadelphia. The future development of the industry promises a valuable and rapidly growing traffic for the railway. While the development in the portion of British Columbia through which the railway passes has not been as great as it otherwise would have been, consequent on the war and the financial situation, nevertheless development is going on through that section and a number of settlers have taken up land in the Nechako and Buckley valleys, and the outlook for mineral development is also very good. In Manitoba, Saskatchewan and Alberta, increased acreage of new land is being broken each year and put under crop, and this activity has continued during the past year along the G.T.P.R. and its branch lines. Large areas of new land are being plowed for next year's crop, and the present large crop will tax all of the railways in its transportation. The present year has been marked by the inauguration of the National train, which forms the first regular connection between the G.T.R. in the east and the G.T.P.R. in the west, and is operated via the Grand Trunk, the Temiskaming & Northern Ontario and the National Transcontinental Railways, and has proved very popular. There has also been completed the company's new floating dry dock at Prince Rupert, which has been under construction for several years for the accommodation of shipping in a part of the world hitherto remote from facilities of this character. The company's new hotel MacDonald at Edmonton was completed and opened for guests July 5.

The directors elected for the current year are: E.J. Chamberlin, President; W.H. Big-

gar, K.C., Vice President and General Counsel; J.E. Dalrymple, Vice President; Frank Scott, Vice President and Treasurer; W.H. Ardley, Comptroller; A.W. Smithers, Sir H. M. Jackson, Col. Firebrace, Geo. Von Chauvin, W.M. Macpherson, E.B. Greenshields, Hon. R. Dandurand, H.G. Kelley, H.R. Safford and J.R. Booth. Jules Hone is the Dominion Government representative on the Board. The other officers are: Morley Donaldson, Vice President and General Manager; H. Philips, Secretary.

The Grand Trunk Pacific Branch Lines Co. is a subsidiary company of the Grand Trunk Pacific Ry. Co., which was organized for the construction of branch lines in the Western provinces tributary to the G.T.P.R. main line. About 1,000 miles of branch lines have been built and the company has powers to build additional lines.

Its adjourned annual meeting was held at Montreal Oct. 13. The directors for the current year are: E.J. Chamberlin, President; M. Donaldson, Vice President and General Manager; W.H. Ardley, Vice President and Auditor; Frank Scott, Treasurer; W.H. Biggar, K.C.; H.G. Kelley. The Secretary is H. Philips.

## Canadian Northern Railway Construction, Betterments, Etc.

**Montreal Tunnel and Terminal Co.**—The work of excavating the tunnel under Mount Royal is reported to be practically completed. The city section, which extends from the McGill campus to the terminal site at Cathcart St., is said to have been the most difficult part of the work. At the back of the Mountain considerable progress has been made, and it is hoped to get some of the electric and other equipment installed during the winter. The power house building at the western portal is reported completed and ready for the installation of the machinery which is in course of delivery. The 80-ton electric locomotives which will be used for the operation of trains through the tunnel are reported to be ready for delivery.

**Canadian Northern Ontario Ry.**—The Hamilton Board of Health has ordered the C.N.O.R. to instal sanitary conveniences in the houses situated on the company's land in the city. The company has declined to do this and except in some cases has arranged for the wrecking of 28 of the houses. The conveniences ordered will be installed in the remaining houses. The land was acquired for railway construction purposes.

The Board of Railway Commissioners has declined to set aside either in whole or in part an agreement made with the municipality of North Bay, and has approved plans for the erection of a passenger and freight station there.

The section of the company's line between Rideau Jct., just outside Ottawa, and Port Arthur, Ont., has been opened for freight traffic, and will be opened for passenger traffic early in November.

A press report states that construction is being rushed on a short piece of track which will join up the C.N.R. track to the C.P.R. at the Port Arthur station and allow of a transfer of trains from the east without running them down to the yards. There is a considerable amount of rock work on the line.

**Canadian Northern Ry.**—Canadian Northern Pacific Ry.—The opening of the C.N.R. westerly from Edmonton to the Yellowhead Pass, and the extension, known as the C.N. Pacific Ry., to the Pacific Coast, is referred to further on. A list of stations with distances on the latter part of the line was given

in Canadian Railway and Marine World for October. The line west of Edmonton has been operated for some time as far as Onoway. Following is a list of the stations on the section of the line from Onoway to Yellowhead Pass in the order in which they are located going west:—Lake Isle, Evansburg, Chiplake, Dayson, Fulstow, Horner, Scriven, Dandurand, Marlboro, Berks, Everest, Obed, Dalehurst, Bliss, Entrance, Errington, Brule, Bedson, Snarling, Henry House, Maligne, Jasper, Mount Gelkio.

M.H. MacLeod, General Manager and Chief Engineer, arrived in Vancouver, Oct. 9, having made his first official trip of inspection over the line since its completion. The Provincial Minister of Railways, and other Provincial officers, started from Port Mann, and travelled over the line, meeting at Yellowhead Pass, Mr. MacLeod, and the Dominion Government inspecting engineer. The object of this trip was to pass the line for its opening for traffic.

**Vancouver Terminals.**—Tenders for the seawall construction at False Creek, the site of the Vancouver terminals, are under consideration by the engineering staff, and an announcement is expected at an early date as to the awarding of a contract. The specifications for this work are reported to include the following quantities: foundation excavation (wet) 450 cu. yd., concrete 4,950 cu. yd., reinforcing steel 305,000 lb., concrete piles 15,900 1. ft., creosoted fir piles 12,200 1. ft., asphalt 2,820 sq. yd., rock fill 15,500 cu. yd., square timber no. 1 common 19,500 f.b. m., iron in timber including U-bolts 5,500 lb., 255 spring coils.

Temporary freight sheds and other facilities will be installed at once in Vancouver on the reclaimed portion of the False Creek flats. These will be situated on the south side near the production of Front St., east of Main St. The connection from the end of steel of the C.N.P.R., at the south side of New Westminster bridge, with this shed will be over the Great Northern Ry. The freight shed plans call for a building 193 x 40 ft., and a passenger station 120 ft. x 30 ft.; the construction to be of wood. A spur line will be built to give connection with the Great Northern Ry. lines. (Oct., pg. 395.)

**Railway Payments on Queen St. Bridge, Toronto.**—The City of Toronto applied to the Board of Railway Commissioners, Oct. 13, in connection with arrears of payments by the railways concerned in the construction of the high level bridge carrying Queen St. East, Toronto, over railway tracks, which took place nearly five years ago. The city claimed to have paid the whole cost of construction, amounting to about \$720,000, and to have received \$100,000 from the C.P.R. and \$28,000 from the G.T.R., on account. The cost of construction was assessed as follows: C.P.R., 35%; G.T.R., 10%; Canadian Northern Ry., 25%; Toronto Ry., 15%, and the city, 15%. The Board ordered that the companies must pay a portion of the accounts forthwith.

**Railway Men and the War.**—It is shown by an official list published in England recently, that up to Aug. 31 the total number of men engaged on the railways in the United Kingdom, who have enlisted, was 92,658, or 14.9% of the total men engaged in railway work at the commencement of the war.

**The American Association of Travelling Passenger Agents** held its annual convention at Boston, Mass., Oct. 4 and 5. At the close of the convention several of the members, accompanied by their wives and daughters, visited several Canadian cities, including Quebec, Montreal, Ottawa and Toronto, where the party disbanded.



# Canadian Northern Passenger Service Between Sydenham and Harrowsmith.

J.W. Edwards, M.P., filed the following application with the Board of Railway Commissioners some little time since:—"In 1892 Loughboro Township passed a bylaw granting a bonus of \$5,000 to the Kingston, Napanee, and Western Ry. Co., which was to extend its line from Harrowsmith to Sydenham, Ont., a distance of three of four miles. The agreement between the township and the company required the company to run a train for passengers and freight from Sydenham to Harrowsmith in the forenoon and another in the afternoon, these trains to connect with trains going to and coming from Kingston. This was to be daily, Sundays excepted. It was further agreed that the company could only fail in carrying out this service, upon the repayment of the bonus to the township. Since this agreement, the road has been taken over and now forms a part of the Canadian Northern Ry. About the first of the year, the railway company took off the morning train, so that the people of Sydenham have no connection whatever with the trains running to Kingston. This is, of course, a very great inconvenience to that place, which is the largest village in the County of Frontenac."

The Chief Commissioner, Sir Henry L. Drayton gave judgment Sept. 30, Commissioner McLean concurring. After reciting the complaint the judgment says:—

The company in its reply submits that the bylaw the basis of the complaint reads as follows,—"The said company are to run a train for passengers and freight from said station (Sydenham) in the forenoon and one back to it in the afternoon, making connection with the trains at Harrowsmith every day in the week except Sunday."

The company further states that the bylaw had been complied with, as train 7 left Sydenham at 1.59 a.m. and arrived at Harrowsmith at 2.09 a.m.; and that a train left Kingston at 2.45 p.m. arriving at Harrowsmith Jct. at 3.40 p.m. connecting with train arriving at Sydenham at 3.50 p.m. The company's answer proceeds,—

"There is no doubt that at the time the bylaw referred to was passed, the people in Sydenham did not contemplate being on an important trunk line between Ottawa, Toronto, and Montreal, and Sydenham being now on the main line of our railway between these points is, we think, of very much greater advantage to the community than the local service at Harrowsmith, the distance between Harrowsmith and Sydenham being 4.3 miles. Sydenham now gets the benefit of all through trains, and when business improves and the line opens through to Montreal we expect to have a local service between Ottawa and Kingston, in addition to the present main line service. Sydenham now being on the main line has a day and night service east to Ottawa and west to Toronto and intermediate points, and while the morning connection to Kingston is at an awkward hour and involves a wait at Harrowsmith Jct., we still feel that it is a technical compliance with the bylaw and that the only question that should be decided is whether Sydenham gets a reasonable service from the railway at present."

Sydenham lies about four miles east of Harrowsmith, and the Inspector reports that there is a good stage service between Harrowsmith and Sydenham by which connection can be made for Kingston. The discontinuance of train 71, of course, gives rise to the complaint. It was a local from Deseronto to Sydenham and return. The receipts at Sydenham station have been gone into by the Board, with a view to ascertaining whether or not, under the general provisions of the Act, the Board could order the service to be re-instated. Taking the six months period commencing on Oct. 1, 1914, and ending March, 1915, it was found that the total passenger earnings were \$130.00; the total freight earnings \$650.61; and the

total express earnings \$31.30; resulting in gross earnings of about \$811.91 for the period. The Inspector, dealing with the question of course as entirely a matter of reasonable service for traffic offered, proceeds in his report as follows,—

"After going carefully into this matter with the agent and making full inquiries, there would seem to be little or no room for complaint, as Sydenham is on the main line of the C.N.R. between Toronto and Ottawa, and all trains stop at this station. The service between Sydenham and Kingston is not so good as it might be, but there is an up to date stage coach or motor, which runs between Sydenham and Harrowsmith and makes the connections for Kingston. The handling of freight at Sydenham is the same as it always was, and it would be unfair to the railway company to ask it to put on a train, or run train 71 through from Yarker to Sydenham, a distance of about 10.6 miles, which could not be done except at a great loss to the company. It would cost at least \$20 or \$25 a day to do this, and you will note by the earnings for the three months when the train was on, that it was a losing proposition. The fact that Sydenham is now located on the C.N.R. main line between Toronto and Ottawa, and gets the benefit of all the through service, should form some compensation for the slight inconvenience of the poor connections to Kingston. I have no doubt that when business increases, the proper service will be put on and better connections made for Kingston; but, under the present strenuous conditions, it would be unfair to ask the company to run train 71 to Sydenham."

The company also filed a statement showing freight and passenger business between Sydenham and Kingston which covers the period from June 1, 1910, to June 5, 1911. At this time Sydenham had no service on the main line, and the railway was not operated by the Canadian Northern. The return shows that 1007 passenger tickets were issued at a gross return of \$798.90, and 481,764 lbs. of freight handled at a gross return of \$270.38. Under such circumstances, it is clear that no order can be made directing the company to maintain the service, which, in view of the total earnings shown, was entirely unremunerative, resulting in losses to the company which could only be made up from earnings supplied by other localities. Adequate service under the provisions of the Railway Act is a service which it is the duty of the Board to see furnished; and, so far as service is concerned, under the circumstances of this case, no order can be made.

The right of the municipality under its bonus bylaw stands, however, on a different basis. A hearing by the Board was had in Toronto, at which the company was called on to show cause why the bylaw should not be carried out. The clauses of the bylaw applicable are,—

"The said company are to run a train for passengers and freight from said station (Sydenham) in the forenoon and one back to it in the afternoon, making connection with trains at Harrowsmith every day in the week except Sunday."

"Should the said company at any time hereafter fail to maintain said road and station or run said trains they can only do so upon repayment of the bonus of \$5,000 to said municipality."

The company is maintaining the station. It is giving Sydenham, owing to the fact that it is now on the main line of the Canadian Northern, greater railway accommodation than that called for by the bylaw, in that the company runs two eastbound trains and two westbound trains between Toronto and Ottawa daily, all stopping at Sydenham and at Harrowsmith,—the westbound trains leaving Sydenham at 1.59 a.m. and 3.10 p.m., and the eastbound trains arriving at Sydenham at 4.18 a.m. and 4.10 p.m. Before the installation of the Canadian Northern service, through east and west traffic, either from or to Sydenham, was carried by the Kingston, Napanee & Western by way of

Harrowsmith to Kingston. So far as this service is concerned, there is no doubt that it is much better looked after so far as Sydenham is concerned under the present train service, carried as it is east and west direct, than by what was formerly practically a transfer to Kingston. While no doubt the east and west traffic is something which Sydenham was interested in and probably one of the reasons why the township agreed to give the bonus of \$5,000 to the construction of the line, undoubtedly, however, the local service between Sydenham and Kingston was a matter of moment; and it is a service, between Kingston and Sydenham, which is without any reservation covered by the bylaw. The company does not dispute that its predecessors pledged themselves to observe the terms of the bylaw. There is no doubt that the \$5,000 was accepted, and accepted subject to those terms. Under it, the company has to run a train in the forenoon and one back in the afternoon connecting with the trains at Harrowsmith. This connection at Harrowsmith is a Kingston connection. The only morning train from Sydenham to Harrowsmith is the 1.59 a.m. train, arriving at Harrowsmith at 2.09 a.m.; and the morning train from Harrowsmith to Kingston on the C. N. R. leaves Harrowsmith at 9.15 a.m., entailing a wait of seven hours at Harrowsmith. At Harrowsmith both railways run into the same station, and trains on the Canadian Pacific can conveniently be taken from Harrowsmith to Kingston. The first train from Harrowsmith on the C.P.R. leaves at 6.55 a.m., making a wait of four hours.

Apart from any question of connections, however, I am of the opinion that an obligation to supply a train in the forenoon is not met by supplying one 1 hour and 59 minutes after midnight. The bylaw, accepted by the company's predecessors as it was, is one, which as I construe it, was intended to provide, and did provide, for a service which could be used by the people of Sydenham, a service which would enable them to leave Sydenham in the morning and not at night, and return in the afternoon. There is no difficulty about the afternoon train, as one leaves Harrowsmith at 3.55. I am of the opinion, therefore, that the company has not provided the morning service, which, under the bylaw, it is obliged to do; and that, again under the bylaw, unless this service is given, the bonus of \$5,000 has to be repaid. I have no doubt that the people at Sydenham would sooner that a proper morning service to Harrowsmith with proper connection to Kingston would be given than that the township should recover this \$5,000. In view of the earnings, however, as already pointed out, the Board cannot order that to be done. The company, however, will be given the option of restoring the service within one month, and thereafter maintaining it, or of repaying the \$5,000 bonus. No order will, therefore, issue, until Nov. 1, when, in the absence of the restoration of the service, an order will go directing repayment of the \$5,000 by the Canadian Northern to the municipality.

The Brule Lake Coal Co. has been incorporated under the Dominion Companies Act, with a capital of \$200,000 and office in Toronto, to carry on a coal mining business, and in connection therewith to construct tramways, and to operate steam and other vessels. The provisional directors are G. Ruel, R.H.M. Temple, A.J. Reid, G.N. Limpicht, F.C. Allen, Toronto.



### Railway Finance, Meetings, Etc.

**Canadian Northern Ry.**—There has been a meeting with the Secretary of State at Ottawa, in connection with a collateral trust agreement between the C.N.R. and the Columbia Trust Co., dated Sept. 1, securing the company's two year 5% collateral trust gold bonds.

**Grand Trunk Ry.**—A dividend of 11-2% has been declared for the half year ended June 30, on the 1% guaranteed non-cumulative stock. This is the same amount as declared for the previous half year.

**Lake Superior Corporation.**—The following constitute the board for the current year, as elected at the recent annual meetings,—W.K. Williams, Chairman; W.E. Stavert, President; H. Copell, Vice President; A. Taylor, Secretary; Jas. Hawson, Treasurer; F. McOwen, J.T. Terry, J.S. Dale, H.I. Underhill, W.C. Franz, A.H. Chitty and T. Gibson.

**Ottawa and New York Ry.**—The following are the directors for the current year,—A.H.

Frank Scott, Secretary and Treasurer; J.E. R.R. Logan.

**Pere Marquette Rd.**—P.H. King, Operating Receiver, announced Oct. 19, that a dividend of 10% would be paid on Dec. 1 to all creditors holding open accounts for materials and supplies. \$70,000 a month is being paid on defaulted equipment notes. It is expected to clear off these notes in another twelve months.

**Pere Marquette Rd.**—A decree of foreclosure and an order for the sale of the property were filed in the U.S. Courts, Oct. 5. The order directs that no bid of less than \$14,000,000 shall be received. All the cases against the P.M.R. are to be consolidated and the date for the sale of the property is to be fixed by the Master of the Court.

**Temiscouata Ry.**—Net earnings for July, \$3,801, against \$6,208 for July, 1914.

**Temiscouata Ry.**—The directors elected at the recent annual meeting are:—J.H. Walsh, President; E.O. Grundy, Vice President; A.

### Information About A. F. Dillinger Wanted.

The Forester, the Independent Order of Foresters' official organ, published in Toronto, had in its last issue a portrait of A.F. Dillinger, respecting whom it said:—"Brother A. Frank Dillinger, a member of Court Ottawa, no. 41, has been absent from home over a year. His wife and aged mother, and the members of Court Ottawa are extremely anxious to hear from him. The brother is 45 years old, 6 ft. high, weighs about 155 lbs., of slender build, walks erect, dark complexion, dark hair mixed with gray, brown eyes, prominent features, wears no. 8 glove and a no. 8 shoe, a scar across nose and forehead, dimple in chin. In addition to being a Forester, he is a Mason and Knight of the Golden Eagle. He will probably be employed as operator or train despatcher. Please address the Editor."

The A.F. Dillinger referred to was in the Canadian Pacific service, in various capaci-



The Canadian Pacific Railway's new Union Station at Quebec.

A complete description of this station was published in Canadian Railway and Marine World for September and a ground plan showing the location was published in the October issue.

Smith, President; W.K. Vanderbilt Jr., Vice President; F.W. Vanderbilt, W. Rockefeller, W.L. Scott, G.D. Kelley, J.S. Ewart, W.P. Torrance and D.W. Saunders. The other officers are,—John Carstensen, I.W. Place and C.F. Daly, Vice Presidents; D.W. Pardee, Secretary; E.F. Stephenson, Assistant Secretary; E.L. Rossiter, Treasurer; L. Bender and G.W. Porter, Assistant Treasurers.

**Ottawa and New York Ry.**—St. Lawrence and Adirondack Ry.—Application is being made by the Ottawa and New York Ry., and the St. Lawrence and Adirondack Ry., to the Board of Railway Commissioners for a recommendation to the Governor-in-Council for the sanction of leases of their lines and properties to the New York Central Rd., upon the terms and conditions named therein. The Dominion Parliament last session authorized the two companies named to lease their lines to the N.Y.C.R., for 21 years.

**Ottawa Terminals Ry.**—The directors for the current year are:—E.J. Chamberlin, President; H.G. Kelley, Vice President;

H. Cook, A. Laurie, Fergus Murphy, W.N. Campbell, T.J. Maguire. The Secretary and Manager is C.A. Stewart.

**Toronto Terminals Ry.**—There was filed with the Secretary of State at Ottawa, Oct. 5, a mortgage deed dated May 31, between the Toronto Terminals Ry., the Grand Trunk Ry., and the Canadian Pacific Ry., in which the latter two companies are indemnified as mortgagees upon the terms recited therein.

**White Pass and Yukon Route.**—Gross earnings from Jan. 1 to Sept. 21, \$1,283,477 against \$1,340,865 for same period, 1914.

**Prince Rupert's Fishing Industry.**—John Pullen, President, Canadian Express Co., who has returned to Montreal recently from a trip to the Pacific Coast, says the fishing industry at Prince Rupert has assumed considerable importance. The average monthly receipts of fish there are 1,723,000 lbs., mostly halibut, and 73 vessels touched at the port in 30 days. The business has increased so much that the company will have to add more refrigerator equipment.

ties some years ago, being stationed at Regina, Sask.; Brandon, Man.; Fort William, Ont.; and Kitchener, B.C. About 1898 he was appointed operating Assistant to the Chief Traffic Officer, Board of Railway Commissioners, at Ottawa, but resigned in 1911. In August of that year he was reported to have been arrested at Kansas City, Mo., with a Mrs. Rose Morgan, in whose company he was said to have been. Mrs. Dillinger, who had gone to Kansas City from Ottawa, was present when the arrests were made.

**Free Transportation for Threshing Machines.**—The Canadian Northern and the Grand Trunk Pacific Railways are reported to have issued orders, Oct. 5, under which second hand threshing machines may be shipped to any point in Manitoba, Saskatchewan or Alberta up to Dec. 31, full freight rates being charged, but upon presentation of the original bill of lading and the return of the outfit to the starting point by Mar. 1, 1916, no charge will be made for the return journey.



## The Canadian Pacific Railway's Roll of Honor.

Following the lists of C.P.R. officers and employes killed or wounded in action in Europe, which were issued by C.H. Buell, Staff Registrar and Secretary, Pension Department, on Aug. 3 and 25, two more lists, nos. 2 and 3, were issued, Oct. 4, as below, prefaced by the following remarks: "Several thousand officers and employes of this company enlisted for active military duty with the Canadian Expeditionary Forces, and the majority of them are now in Europe, bravely battling for Canada and the Empire. As particulars of army reservists are not available, these lists of those who have given up their lives for their country, or been wounded in action, are necessarily incomplete, and do not therefore indicate fully the extent to which the company's officers and employes have participated in the great struggle."

### List 3.

Austin, Kenneth G., yardman, Fort William, wounded.  
Bachelder, Dell A., yardman, Lethbridge, wounded.  
Bedford, Percy, waiter, Montreal, wounded.  
Blades, Ernest R., clerk, Winnipeg, wounded.  
Button, Alex. M., trainman, Kenora, wounded.  
Cockle, Robert S., sectionman, La Riviere, wounded.  
Cope, William, clerk, Windsor, killed in action.  
Crouch, J., porter, Port McNicoll, died of wounds.  
Daniel, Wm.T., resident engineer, Regina, gas poisoning.  
Day, Harry, waiter, Montreal, wounded.  
Dickinson, Chas.E., apprentice, Winnipeg, wounded.  
Dumais, J.B., fireman, Fort William, killed in action.  
Fletcher, Charles, waiter, Victoria, wounded.  
Gillespie, H.S.B., trainman, Atlantic Division, wounded.  
Godley, John, second cook, Montreal, wounded.  
Goodrich, F.E., locomotive man, West Toronto, wounded.  
Gregory, Richard A., checker, Calgary, wounded.  
Hatcher, Chas.F., fireman, Calgary, suffering from shock.  
Hay, Adam C., clerk, Winnipeg, wounded.  
Hesketh, James A., assistant engineer, Winnipeg, wounded.  
Hogg, James E., fireman, Calgary, wounded.  
Hughes, Wm., machinist, Angus, killed in action.  
Hustwayte, Harry, carpenter, Winnipeg, wounded.  
Johnson, Geo.A., laborer, Revelstoke, wounded.  
Linnington, Alf.W., constable, Toronto, killed in action.  
McCarthy, Herbert, laborer, Arcola, suffering from shock.  
McIlroy, John, clerk, Calgary, wounded.  
Miller, Thos., clerk, Field, wounded.  
Muncaster, Art.J., yardman, Outremont, wounded.  
Spurgeon, Chris., constable, Winnipeg, wounded.  
Storrier, Melville, constable, Montreal, wounded.  
Thrasher, John M., fireman, Kenora, wounded.  
Toyne, Joseph, wiper, East Calgary, wounded.  
Ware, Alfred James, constable, Montreal, wounded.

Young, S.E.B., fitter, Angus, wounded.

### List 4.

Ballock, John, frt. handler, Fort William, killed in action.  
Batchelor, Thos.E., constable, Winnipeg, wounded.  
Biggam, Andrew, clerk, Moose Jaw, wounded.  
Boothby, Geo.W., clerk, Montreal, wounded.  
Bratt, S.W., silver cleaner, Quebec, wounded.  
Burns, Edward, specialist, Angus, wounded.  
Burrells, F.H., bell boy, Winnipeg, wounded.  
Crosby, Geo.C., fireman, Alyth, wounded.  
De LaCour, E., houseman, Winnipeg, wounded.  
Dixon, Julian, fireman, Calgary, killed in action.  
Duncan, David, helper, Glen Yard, killed in action.  
Evans, Edwin, helper, Angus, wounded.  
Farnworth, Percy, brass filer, Angus, wounded.  
Fisher, Harry R., fireman, Eastern Division, died of wounds.  
Gray, Wm.E., conductor, Brandon, wounded.  
Hall, Harry C., clerk, Winnipeg, wounded.  
Haynes, Thos.R., clerk, Cranbrook, wounded.  
Halloway, Wm., wiper, Brandon, wounded.  
Holmes, Jas.S., wiper, Medicine Hat, wounded and missing.  
Howlett, H.B., checker, Fort William, wounded and missing.

Hyslop, Jas., car repairer, Hochelaga, gas poisoning.  
Knox, Harvey, wiper, Moose Jaw, wounded.  
Lavender, James, checker, Fort William, wounded.  
Lewis, Arnold, second cook, Montreal, wounded.  
MacAuley, Murdo, fireman, Cranbrook, wounded.  
McKay, Charles, checker, Fort William, killed.  
Maxwell, A.W., clerk, Winnipeg, suffering from shock.  
Morrow, Robt.F., locomotive man, Winnipeg, died of wounds.  
Mason, Wm.J., stower, Fort William, wounded.  
Naylor, Herb.V., clerk, Winnipeg, killed.  
Oke, Richard G., brakeman, Souris, wounded.  
Pratt, Clifford, clerk, Montreal, wounded.  
Rafferty, Thos.P., brakeman, Cranbrook, wounded.  
Robinson, Alfred, linen handler, Montreal, wounded.  
Sellick, Wm., pipe fitter, Hochelaga, wounded.  
Shaw, Wm., stat'y. engine man, Vancouver, died of wounds.  
Shiers, Frank, bridgeman, Moose Jaw, wounded.  
Taylor, C.S., clerk, Montreal, wounded and prisoner.  
Walker, Wm.G., clerk, Montreal, wounded.  
Wheelhouse, C., wiper, Assiniboia, killed in action.  
Williams, A.G., fireman, Medicine Hat, wounded.  
Wiman, E.L., fireman, Smith's Falls, died of wounds.

## Grain in Store at Terminal Elevators, Interior Terminal Elevators and at Public Elevators in the East.

Week ending Oct. 8, 1915.	Wheat, bushels.	Oats, bushels.	Barley, bushels.	Flax, bushels.	Totals, bushels.
<b>Fort William:—</b>					
C.P.R. ....	1,580,404	82,573	37,533	24	1,700,534
Consolidated Elevator Co. ....	761,871	65,099	19,800	41,289	888,059
Empire Elevator Co. ....	848,523	63,876	28,246	83,379	1,024,024
Ogilvie Flour Mills Co. ....	758,999	27,705	10,179	.....	796,883
Western Terminal Elevator Co. ....	1,193,946	61,985	3,156	160,759	1,419,846
G.T. Pacific ....	1,066,764	111,047	14,871	59,654	1,252,336
Grain Growers' Grain Co. ....	1,031,534	43,458	16,752	.....	1,091,744
Fort William Elevator Co. ....	797,986	70,557	18,580	95,660	982,783
Eastern Terminal Elevator Co. ....	595,970	105,498	19,559	.....	721,027
<b>Port Arthur:—</b>					
Port Arthur Elevator Co. ....	1,815,173	174,603	115,032	225,981	2,330,789
D. Horn & Co. ....	16,325	936	871	22,429	19,561
Dominion Government Elevator ..	1,138,108	98,584	21,320	39,680	1,297,692
Grain afloat .....	.....	.....	.....	.....	.....
<b>Total Terminal Elevators .....</b>	<b>11,605,603</b>	<b>905,921</b>	<b>305,899</b>	<b>728,885</b>	<b>13,546,278</b>
<b>Saskatoon Dominion Government Elevator .....</b>	<b>28,541</b>	<b>.....</b>	<b>.....</b>	<b>37</b>	<b>28,578</b>
<b>Moosejaw Dominion Government Elevator .....</b>	<b>23,140</b>	<b>260</b>	<b>344</b>	<b>612</b>	<b>24,356</b>
<b>Total Interior Terminal Elevators .....</b>	<b>51,681</b>	<b>260</b>	<b>344</b>	<b>649</b>	<b>52,934</b>
<b>Depot Harbor .....</b>	<b>50,000</b>	<b>.....</b>	<b>.....</b>	<b>.....</b>	<b>50,000</b>
<b>Midland:—</b>					
Aberdeen Elevator Co. ....	.....	259	.....	.....	259
Midland Elevator Co. ....	.....	.....	.....	.....	.....
Tiffin, G.T.P. ....	262	.....	.....	.....	262
Port McNicoll .....	34,379	25,637	2,728	.....	62,739
Collingwood .....	41	.....	.....	.....	65,793
Goderich .....	78,970	.....	.....	.....	78,970
<b>Kingston:—</b>					
Montreal Transportation Co. ....	.....	.....	.....	.....	.....
Commercial Elevator Co. ....	.....	.....	.....	.....	.....
Port Colborne .....	.....	.....	.....	.....	.....
Prescott .....	.....	.....	.....	.....	.....
<b>Montreal:—</b>					
Harbor Commissioners No. 1 ...	411,139	.....	71,112	.....	481,581
Harbor Commissioners No. 2 ...	562,220	22,315	73,531	19,685	677,751
Montreal Warehousing Co. ....	218,485	87,180	.....	.....	305,665
Quebec Harbor Commissioners ...	3,509	.....	.....	.....	.....
West St. John, N.B. ....	6,212	.....	.....	.....	.....
Halifax, N.S. ....	.....	.....	.....	.....	.....
<b>Total Public Elevators .....</b>	<b>1,365,217</b>	<b>140,314</b>	<b>149,600</b>	<b>65,752</b>	<b>1,710,666</b>
<b>Total quantity in store .....</b>	<b>13,022,501</b>	<b>1,046,495</b>	<b>455,912</b>	<b>65,752</b>	<b>14,590,660</b>
*Corn.	.....	.....	.....	.....	.....



# Mainly About Railway People Throughout Canada.

**A.W.Smithers**, Chairman of the Board, G.T.R. and G.T.Pacific Ry., arrived in Montreal Oct. 21, for his annual inspection of the system.

**H.C.Groat**, General Superintendent, Atlantic Division, C.P.R., St. John, N.B., has been granted leave of absence and has gone to California.

**A.O.Norton** and **Harry A.Norton**, of Coaticook, Que., have each contributed a machine gun to the 5th Canadian Mounted Rifles.

**Capt.C.H.Crowdy**, of the 13th Royal Highlanders, Montreal, son of G.J.Crowdy, of Jas.Hutton & Co., was killed in action in France, Oct. 21.

**Sir Sandford Fleming, K.C.M.G.**, director, C.P.R., who died recently, left an estate valued at \$238,534, most of which had been distributed prior to his death.

**J.G.Sullivan**, M.Can.Soc.C.E., Chief Engineer, C.P.R., Winnipeg, represented Canada at the Congress of Engineers at San Francisco, Cal., recently.

**F.W.Peters**, General Superintendent, British Columbia Division, C.P.R., Vancouver, spent a short holiday in October, hunting in Alberta.

**Sir Thomas Skinner**, who is a director of the C.P.R., has resigned from the Hudson's Bay Co. committee, and has been succeeded by his son, T. Hewitt Skinner.

**M.P.Davis**, of M.P. and J.T.Davis, railway contractors, Ottawa and Quebec, has given \$1,000 to the fund being raised for the benefit of returned wounded soldiers.

**A.Copony**, Master Car Builder, G.T.R., Chicago, Ill., has been elected a member of the Master Car Builders' Association standing committee on specifications and tests for materials.

**Hon.Samuel Barker, M.P.**, who died at Hamilton, Ont., recently and was at one time General Manager, Northern Ry. of Canada, left \$210,847 to his widow, four daughters and son.

**G.C.Martin**, General Freight and Passenger Agent, Toronto, Hamilton and Buffalo Ry., Hamilton, Ont., attended the national convention of safety first committees at Philadelphia, Pa., Oct. 20.

**Lieut.William Wallace**, who has joined the 58th Battalion, at Brantford, Ont., recently for overseas service, was formerly one of the engineers on the construction of the Lake Erie and Northern Ry.

**C.R.Hosmer**, one of the C.P.R. directors, is stated in a press report to be the second largest private holder of Canadian bank stocks. It is said that his yearly income from that source alone is \$36,300.

**Capt.L.H.Curry**, 42nd Highlanders, formerly Assistant to the Vice President, Canadian Steel Foundries Ltd., Montreal, and third son of Hon.N.Curry, was reported, Oct. 21, to have been killed in action.

**G.McLaren Brown**, European Manager, C.P.R., London, Eng., is one of the first directors of the Institute of Industry of Great Britain and Ireland Ltd., which has been registered in London recently.

**Jas. Coleman**, Superintendent Car Department, G.T.R., Montreal, has been elected a member of the Master Car Builders' Association standing committees on arbitration and specifications and tests for materials.

**E.Moore**, chief clerk to I.G.Ogden, Vice President, Finance and Accounting Department, C.P.R., Montreal, was presented with a case of silver and a purse of money, by

his associates, Oct. 15, on the occasion of his recent marriage.

**W.W.Kibbie**, formerly town ticket and telegraph agent, C.P.R., Carleton Place, Ont., died there, Oct. 10, aged 56, from paralysis. He occupied the position for about 30 years, and retired in July on account of ill health.

**J.E.Quick**, General Baggage Agent, G.T.R. and G.T.Pacific Ry., Toronto, was re-elected, for the 31st consecutive year, Secretary of the American Association of General Baggage Agents, at its annual convention at Kansas City, Mo., Oct. 13 and 14.

**L.W.Mitchell**, Treasurer, Canadian Northern Ry.; Purchasing Agent, Eastern Lines, Canadian Northern Ry.; and Purchasing Agent, Mackenzie, Mann & Co. Ltd., has



**H. Hulatt.**  
Manager of Telegraphs, Grand Trunk Railway and Grand Trunk Pacific Railway.

been elected by acclamation as a town councillor of Leaside, a Toronto suburb.

**W.M.Kirkpatrick**, Assistant Freight Traffic Manager, Eastern Lines, C.P.R., Montreal, whose leave of absence for active service was mentioned in our last issue, has been appointed Captain in the Canadian Grenadier Guards, 87th Overseas Battalion.

**Capt.H.Wellwood**, of the Canada Overseas Railway Construction Corps, whose home is at Kingston, Ont., and Sergeant-Major Wood, of St. John, N.B., have, according to a press dispatch, arrived in Montreal from England, to get drafts of men for the corps.

**J.S.Dennis**, Assistant to the President, C.P.R., who is in charge of the Department of Natural Resources at Calgary, Alta., has been elected First Vice President of the International Irrigation Congress, which held its 22nd annual session recently at Stockton, Sacramento and San Francisco, Cal.

Daily press reports stated recently that **Sir Henry Drayton**, Chief Railway Commissioner, and **D'Arcy Scott**, Assistant Chief

Railway Commissioner, would visit England shortly to discuss with officials there a number of transportation matters. We are officially advised that the press report was incorrect. **D'Arcy Scott** recently returned from England, where his two sons are at school.

**Frederic Nicholls**, director Canadian Northern Ry., and Toronto Ry., and President Canadian General Electric Co., has been appointed acting President of the Dominion Iron & Steel Co., in consequence of the illness of the President, **J.H.Plummer**. The board vacancy caused by Sir William Van Horne's death has not yet been filled.

**W.B.Mackenzie**, formerly Chief Engineer and afterwards Right of Way and Lease Agent, Canadian Government Railways, Moncton, N.B., has received information that his son, **Capt.B.H.Mackenzie**, who is on active service in Europe with the 24th Battalion, was officially reported wounded in action, Oct. 14.

**Geo. Chahoon, Jr.**, heretofore Vice President and Manager, Laurentide Co., Ltd., having been elected President to succeed the late Sir William Van Horne, **C.R.Hosmer**, one of the Canadian Pacific Ry.'s directors, has been elected Vice President, and **J.K.L.Ross**, another C.P.R. director, has been elected a director to fill the vacancy caused by Sir William Van Horne's death.

**W.J.Rooney**, who has been appointed Division Superintendent of Telegraphs, Alberta and British Columbia Lines, G.T.Pacific Ry., Edmonton, Alta., was, from 1896 to 1902, in Toronto Electric Light Co.'s service; 1902 to 1905, in construction department, Great North Western Telegraph Co.; 1905 to Jan. 1913, General Foreman of Telegraph Construction, G.T.Pacific Ry.; Jan. 1913 to Oct. 25, 1915, Superintendent of Telegraph Plant, G.T.Pacific Ry., Winnipeg.

**Rowland F.Hill**, who has been appointed Assistant General Freight and Passenger Agent, Toronto, Hamilton and Buffalo Ry., Hamilton, Ont., was born there, Dec. 14, 1889, and entered T.H.& B.R. service in July, 1906, since when he has been, to Sept. 1906 to Sept. 1909, stenographer, General Freight and Passenger Agent's office; Sept. 1909 to Nov. 1911, Soliciting Freight Agent, Hamilton; Nov. 1911 to May 1915, rate clerk; May to Sept. 1915, chief clerk to General Freight and Passenger Agent and General Traffic Manager.

**W.R.Fitzmaurice**, who has been appointed acting Superintendent, District 2, Intercolonial Ry., Campbellton, N.B., in consequence of Evan Price's death, was born at Bedford, N.S., Mar. 19, 1870, and entered I.R.C. service May 21, 1886, since when he has been, to 1889, operator at various stations in Nova Scotia; 1889 to 1897, assistant agent, Springhill Jct., N.S.; 1897 to 1898, agent, Oxford Jct., N.S.; 1898 to Aug. 12, 1913, agent, Amherst, N.S.; Aug. 12, 1913, to Sept. 28, 1915, Assistant Superintendent, Moncton-Ste.Flavie District, Newcastle, N.B.

**H.LeJeune**, formerly of the C.P.R. Hotel Department, who was stricken with paralysis at Winnipeg, Sept. 9, as mentioned in Canadian Railway and Marine World for October, was removed, Oct. 19, from the Royal Alexandra Hotel, where he had lived for some years, to the St. Boniface Hospital. His right side is completely paralysed, and though conscious and recognising people, he was at that date unable to speak. It is hoped that it will be possible to remove him to the east early in November.



**Lieut. Herrick S. Duggan**, B.Sc., McGill University, Jr. Can.Soc. C.E., who was in the Royal Engineers, Imperial Army, and whose death is announced, was the son of G. Herrick Duggan, M.Can.Soc. C.E., First Vice-President, Dominion Bridge Co., Montreal. When war broke out he was in the Dominion Bridge Co.'s service in Toronto, and went to England to obtain business for the company. While there he obtained a commission in the Royal Engineers. In writing late in September he said he was chiefly engaged in laying and repairing telegraph and telephone communications.

**Edward Hall Drew**, who has been appointed Inspector Sleeping, Dining and Parlor Car and News Department, Western Lines, Canadian Northern Ry., Winnipeg, was born at Newark, N.J., Aug. 12, 1878, and entered transportation service in 1902, since when he has been, to 1906, sleeping car conductor, Pullman Co., New York City; 1906 to 1907, General Yard Foreman, Pullman Co., Chicago, Ill.; 1907 to 1908, Inspector and Second Assistant Superintendent, Pullman Co., Chicago, Ill.; 1908 to 1914, Assistant Superintendent, Pullman Co., Chicago, Ill.; 1914 to Sept. 1915, dining car conductor, G.T. Pacific Ry., Winnipeg.

**John Harold Valteau**, whose appointment as Secretary-Treasurer, Thousand Islands Ry., and Oshawa Ry., Gananoque, Ont., was announced in our last issue, was born at Selby, Ont., Oct. 14, 1889, and was educated at Deseronto, Ont. He commenced service with the Rathbun Co., Oct. 1904, and acted as messenger and clerk until Apr. 1906. From Apr. 1906 to Aug. 1910, he was clerk in the Audit Department, Bay of Quinte Ry., Thousand Islands Ry. and Oshawa Ry., Deseronto, Ont.; Aug. 1910 to July 1912, Travelling Auditor and Assistant to Auditor, same roads; July to Oct., 1912, Accountant, Thousand Islands Ry. and Oshawa Ry., Deseronto, Ont.; Oct. 1912 to Sept. 1915, Accountant, same roads, Gananoque, Ont.

**Percy Giffkins**, who has resigned the General Managership of the Dominion Atlantic Ry., as referred to under "Transportation Appointments Throughout Canada" on another page of this issue, was born at Harpenden, England, Dec. 25, 1850, entered railway service in 1871 as audit clerk and was subsequently paymaster, Windsor & Annapolis Ry., now the Dominion Atlantic Ry., since which he has been consecutively 1872 to 1875, station master, same road, at Annapolis and Halifax; 1875 to 1889, Auditor; 1889 to 1893, Auditor and General Passenger Agent; 1893 to Jan. 1896, General Passenger Agent; Jan. 1896 to July 1897, Traffic Superintendent; July 1897 to May 1, 1911, Superintendent; May 1, 1900 to Oct. 31, 1915, General Manager, same road.

**Capt. T. C. Irving, Jr.**, A.M. Can. Soc. C.E., of Toronto, Vice President, Robert W. Hunt & Co. Ltd., bureau of inspection, tests and consultation, who went overseas with the first Canadian Expeditionary Forces, has been appointed temporary Major. He left Toronto in command of the 2nd field company, Canadian Engineers, and continued in that position at Valcartier, but in the readjustment of officers Major Lindsay was appointed to the command, with Capt. Irving second in command. About a week before the first contingent left Salisbury for France, Major Lindsay was thrown from a horse and had to stay behind in England, Capt. Irving again assuming command until the middle of May, when Major Lindsay rejoined in France. Since Major Lindsay's promotion to Colonel in command of the 1st division, Capt. Irving has again been in command of the 2nd company.

**C. T. Delamere**, who has been appointed acting Engineer Maintenance of Way, Eastern Lines, C.P.R., Montreal, was born at

Brainerd, Minn., Mar. 18, 1881, and graduated in civil engineering from Minnesota University in 1903. He entered railway service in 1903, since when he has been, to 1904, transit man, Northern Pacific Ry.; 1904 to 1905, Resident Engineer, same road; 1905 to 1908, Division Engineer, same road; 1908 to 1909, Locating Engineer, Western Dakota Ry.; 1909 to 1911, Division Engineer, same road; 1911 to July, 1912, Resident Engineer and Division Engineer, Canadian Northern Ontario Ry.; July, 1912, to Sept., 1913, Assistant District Engineer, C.N. Ontario Ry., Port Arthur; Sept., 1913, to Feb., 1915, Assistant Engineer of Construction, Eastern Lines, C.P.R., Montreal; Feb., 1915, to date, acting Engineer of Construction, Eastern Lines, C.P.R., Montreal. He also continues in the latter position.

**H. J. White**, whose appointment as Supervisor of Car Work, Eastern Lines, Canadian Northern Ry., Toronto, was announced in a previous issue, was born at Brownington, Vt., Apr. 1, 1871, and entered railway service



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J. H. Valteau,  
Secretary-Treasurer, Oshawa Railway and  
Thousand Islands Railway.

in May 1893, since when he has been, to Sept. 1894, car repairer and joint car inspector, C.P.R. and Boston and Maine Rd., Newport, Vt.; Sept. 1894 to May 1900, joint Car Inspector, C.P.R. and Canada Atlantic Ry., St. Polycarpe Jct., Que.; May 1900 to Feb. 1903, Car Inspector, C.P.R., Toronto; Feb. 1903 to Sept. 1906, leading hand carpenter, C.P.R., Outremont, Que.; Sept. 1906 to May 1911, Car Foreman and Wrecking Foreman, C.P.R., North Bay, Ont.; May 1911 to Nov. 1913, Car Foreman and Wrecking Foreman, C.P.R., West Toronto, Ont.; Nov. 1913 to Aug. 10, 1915, General Foreman Car Department, Quebec Grand Division, Canadian Northern Ry., Joliette, Que.

**Evan Price**, Superintendent, Moncton and Mont Joli District, Intercolonial Ry., Campbellton, N.B., who died there Sept. 27, after having been ill for some time, was a son of the late William Price, a Montreal contractor, and was born at New York, Nov. 19, 1852. He entered the I.R.C. service April 3, 1876, as train dispatcher. On Oct. 1, 1881, he was appointed Chief Train Dispatcher and on Aug. 15, 1902, Superintendent, the

whole of his service being performed at Campbelltown. He leaves a widow, a son and a married daughter. Frederick Price, Superintendent, Car Service, Grand Trunk Ry., Montreal, is one of his brothers. The late H. A. Price, who at the time of his death was District Passenger Agent, Canadian Government Railways, Montreal, was another brother. The funeral at Campbelltown was attended by J. K. McNeillie, General Superintendent, Canadian Government Railways, and some other general officers and a number of I.R.C. officials.

**Albert H. Eager**, whose appointment as Assistant Superintendent of Rolling Stock, Canadian Northern Ry., Winnipeg, was announced in our last issue, was born at Waterloo, Que., July 15, 1868, and entered railway service June 1, 1885, since when he has been, to June 1, 1893, apprentice machinist, South Eastern Ry. and C.P.R., Farnham, Que.; June 1, 1893, to Aug. 10, 1899, machinist, C.P.R., Farnham, Que.; Aug. 10, 1899, to Nov. 1, 1901, Locomotive House Foreman, C.P.R., Farnham, Que.; Nov. 1, 1901, to Mar. 1, 1903, Locomotive Foreman, C.P.R., Megantic, Que.; Mar. 1, 1903, to May 1, 1906, Locomotive Foreman, C.P.R., Cranbrook, B.C.; May 1, 1906, to June 1, 1907, General Foreman, C.P.R., Calgary, Alta.; June 1, 1907, to Nov. 1, 1908, District Master Mechanic, C.P.R., Kenora, Ont.; Nov. 1, 1908, to May 1, 1910, Locomotive Foreman, C.P.R., Calgary, Alta.; May 1, 1910, to Aug. 1, 1915, Superintendent of Shops, Canadian Northern Ry., Winnipeg.

**A. B. Smith**, heretofore Manager, Grand Trunk and Grand Trunk Pacific Railway's Telegraphs, who has resigned on account of ill health, was born in Montreal. As a youth in 1862 he entered the Montreal Telegraph Co.'s service at Montreal. In Aug. 1869 he was appointed chief operator at Hamilton, Ont., and in 1872 was appointed General Inspector. In 1889 he was appointed Superintendent of Construction, Great North Western Telegraph Co., which had in 1881 taken over the maintenance and operation of the Montreal Telegraph Co.'s lines. In Nov. 1905 he was appointed Manager of Telegraphs, G.T. Pacific Ry., with office at Montreal. Subsequently, in order to maintain direct supervision over all construction and development work in the west, his office was transferred to Winnipeg, and under his management not only was the construction of all telegraph lines on the G.T. Pacific accomplished but a commercial telegraph service was organized. On Jan. 1, 1913, his jurisdiction was extended to include the entire G.T.R. system, with office at Montreal. He acted for many years as electrical inspector for the Underwriters' Association, and was one of the original promoters of the Canadian Electrical Association and was its President in 1893.

**Henry Hulatt**, who has been appointed Manager of Telegraphs, Grand Trunk Ry. and Grand Trunk Pacific Ry., Montreal, and whose portrait appears in this issue, was born in London, England, Feb. 15, 1883, and after being engaged in commercial and journalistic work in England he came to Canada and entered railway service May 3, 1907, since when he was, to Mar. 1, 1908, clerk in stores department, Canadian Northern Ry., Winnipeg; Mar. 1, 1908 to Jan. 1, 1910, Secretary to the Manager of Telegraphs, G.T. Pacific Ry., Winnipeg. He was appointed chief clerk Jan. 1, 1910, and was the Manager's principal assistant in the organization of the G.T.P. railway and commercial telegraph service, and of the railway time service department. On Jan. 15, 1913, consequent on the Manager's jurisdiction being extended over the entire G.T.R. system, the head office was transferred to



Montreal and he was appointed Commercial and Traffic Superintendent of Telegraphs, at Winnipeg, in charge of telegraph lines west of Fort William, and at the same time was also appointed Superintendent of Time Service, which positions he held until his present appointment, Oct. 1, 1915. Under his direct supervision the commercial telegraph service has been extended to reach the principal cities in the Prairie Provinces and also to some important points in British Columbia, particularly Prince George and Prince Rupert.

### Association of Manufacturers of Chilled Iron Wheels.

At the annual meeting in New York Oct. 12, the directors were re-elected, G.W. Lyndon, continuing as President. J.A. Kilpatrick, President of the Dominion Wheel and Foundries Ltd., Toronto, and of the Albany Car Wheel Co., Albany, N.Y., is one of the Vice Presidents, and W.S. Atwood, Chief Engineer and General Manager of Works, Canadian Steel Foundries Ltd., Montreal, is one of the directors.

In submitting the annual report, the President said, among other things:—

It is gratifying to know that the chilled iron wheel has not only been able to maintain itself as the wheel standard of the United States and Canada, but it is beginning to supplant the European standards, as evidenced by the fact that several manufacturers of this association are supplying chilled iron wheels in large quantities to the French and Russian Governments. That our flange recommendations are in the line of improvement is fully demonstrated by the fact that we have at present over 500,000 wheels running that are finding their way through the present track construction without any complaints. The flange used on special wheels is 3-32 of an inch thicker than M.C.B. flange, and the flange as shown in our final argument is 3-16 of an inch thicker at the gauging point than the M.C.B. flange.

It is our purpose to have a sufficient amount of metal in reserve in order to enable us to design a chilled iron wheel of 950 lbs. or heavier; in other words, we are building for the future. We do not want the limits of the possibilities of the chilled iron wheel confined by the limitations of flange design. We want no unreasonable restrictions in the use of the chilled iron wheel. In March of this year we submitted to the chairman of the M.C.B. Association's wheel committee a new set of standard specifications recommending the following:

650 lb. wheel-brake pressure	19,000 lbs.
750 lb. " " "	32,200 lbs.
850 lb. " " "	40,000 lbs.

and detailed drawings of M.C.B. types of wheels and arch plate types of wheels. There is absolutely no limit of weight in the case of steel wheels, but when it comes to a design of chilled iron wheels, all sorts of restrictions follow. We all know what an additional 25 lbs. of iron will do to any of the Standard M.C.B. wheels in the matter of drop and thermal test, and the proof of this is manifest in our 625 lbs. M.C.B. pattern which we were enabled to re-design in 1909 by the additional allowance of only 10 lbs. of metal.

There are some tests which would establish the chilled iron wheel on a much firmer basis and I believe would be advantageous to all manufacturers. The tests that I refer to are comparative tests of the chilled iron wheel and the steel wheel. 1. Relative wearing values when rotating on a steel rail under various loads, the tread wear and flange wear to be observed separately. 2. Abrasion of rail under various conditions of

loading. 3. Determination of the intensity of heating stresses in all parts of the chilled iron wheel, namely, single plate, intersection of plates, front plate, back plate, brackets, etc. 4. Analysis of the thermal test. Intensity of stresses in various parts of the wheel, and effect of thickening the thermal ring, increasing and decreasing the tempera-

ture of the iron, etc. The thermal test should be made an intelligent one instead of the present crude affair that is supposedly alike for all weights of wheels. 5. Determination of stresses in the hub and plates of the chilled iron wheel due to pressing on axles. Variation in stresses due to various classes of machining.

### Freight and Passenger Traffic Notes.

The National Transcontinental Ry. is operating a freight service seven days a week, in and out of Winnipeg, owing to increased business.

The Vancouver Board of Trade proposes to ask the transportation companies for longer stopover privileges for through passengers from northern points.

The Grand Trunk Pacific Ry. has added a new parlor observation buffet car to the train leaving Edmonton, Alta., at 10.35, on Mondays, Wednesdays and Saturdays, for Prince Rupert, B.C.

The Grand Trunk Pacific Ry., on Oct. 3, put on an extra train between Calgary and Edmonton, Alta. A train leaves each city at 10 p.m., arriving at destination at 8 the following mornings.

The Grand Trunk Pacific Ry. announces that passengers may now be routed between Prince Rupert, B.C., and Seattle, Wash., via the Pacific Coast Steamship Co., as well as by the G.T. Pacific Steamship Co.

The Grand Trunk Pacific Ry. announces that the free side trip from Tofield to Calgary and return, authorized in current tariffs to through passengers, is for the future authorized from either Tofield or Edmonton and return.

The C.P.R. put in operation on Oct. 4 a tri-weekly train service between Wilkie and Kelfield, Sask., in place of the bi-weekly service heretofore given. The bi-weekly service between Wilkie and Cut Knife, Sask., was also made a tri-weekly one Oct. 5.

The Canadian Northern Ry. put in operation a train service on the following new sections of line, Oct. 3:—From Elrose Jct. to Dumbane, tri-weekly; from Laura to Carleton, one train each way per week. These new sections of line are in Saskatchewan.

The Industrial Bureau conducted by the Winnipeg city officials is, among other things, selling ocean tickets to aid in relieving the non-employment in the city. To this activity the city ticket agents have made objection, and the matter is under consideration.

A press report states that to facilitate the operation of the completed portion of the Kettle Valley Lines, the C.P.R. has leased to the K.V.R. its Nicola branch, which was built as the Nicola, Kamloops and Similkameen Ry., and extends from Spence's Bridge to Nicola, B.C., 47.1 miles.

The Grand Trunk Pacific Ry. put in operation, Oct. 3, a new train service between Winnipeg and Calgary, Alta., via Edmonton. Trains leave Winnipeg at 6 p.m., and Calgary at 10 p.m., reaching their destination on the second morning, so that passengers are only one business day on the trip. The trains have standard sleeping cars.

J.G. Taylor, General Superintendent, Saskatchewan Division, C.N.R., is reported to have said, Oct. 8, that consideration was being given to a proposal to put on a through train between Shaunavon, Sask., on the Weyburn-Lethbridge line, and Winnipeg as soon as conditions warrant, giving the Weyburn people a night service to Winnipeg.

Press reports state that a regular freight

and passenger service on the Canadian Northern Ry. will be started from Edmonton, Alta., to Vancouver, B.C., Nov. 1, and that a tri-weekly passenger service each way will be given. The service from New Westminster Bridge into Vancouver will be operated under an arrangement with the Great Northern Ry., which company's Vancouver terminals will be used.

The Edmonton, Dunvegan and British Columbia Ry. is operating two trains a week in either direction from Edmonton to McLennan, 261.7 miles. Train 1 leaves Edmonton at 7.30 a.m. on Tuesdays and Fridays, arriving at McLennan at midnight, and train 2 leaves McLennan at 5.15 p.m. on Wednesdays and Saturdays, arriving at Edmonton at 9.45 a.m. on Thursdays and Sundays. There are 39 stations and other stopping places on the line.

The C.P.R. has equipped its night trains between Calgary and Edmonton, Alberta, with the same type of electrically lighted and modern sleeping cars as are in use on the transcontinental trains. There are morning, afternoon and night trains in each direction, the day trains having as their special feature observation cars, with women's parlor, and men's smoking sections, with buffet department between the two, and an observation platform at the end of the car.

The Grand Trunk Pacific Ry. has inaugurated a through tourist car service in connection with the recently started through service on the National Transcontinental Ry. Tourist cars leave Calgary on Fridays, Sundays and Tuesdays, eastbound, and Toronto, on Tuesdays, Thursdays and Saturdays, westbound. The cars run over the G.T.R. from Toronto to North Bay; the Temiskaming and Northern Ontario Ry. from North Bay to Cochrane; the National Transcontinental Ry. from Cochrane to Winnipeg, and the G.T. Pacific Ry. from Winnipeg to Calgary.

The Board of Railway Commissioners has approved of a standard freight mileage tariff for the Canadian Northern Ry. from Port Arthur, Ont., westward to the Pacific Coast. The tariff is divided into two sections; Prairie standard covering the lines between Port Arthur and Tollerton, Alberta, and including interchange traffic between stations on the C.N.R. in Minnesota, and between all stations west of West Fort, Ont., to and including Tollerton, and stations east of Port Arthur to, and including, Sudbury. Pacific standard, covering lines between Tollerton, Alberta, westerly, also interchange between stations west of Tollerton and all stations east thereof to and including Sudbury, Ont. It is also specified as follows: "In the handling of traffic under this tariff between stations in sections A and B as specified above, it will sometimes be found that a combination of rates to and from Tollerton, Alta., using section A between Tollerton and stations east thereof and Section B between Tollerton and stations west thereof will make a lower through rate than would result from the application of the through mileage rate under Section B, in which event the combination to and from Tollerton may be applied."



## Cross Ties Purchased by Railways in 1914.

A total of 19,403,646 cross ties valued at \$8,664,914 were purchased during 1914 by Canadian railways for use in Canada. These companies consisted of 47 steam railways and 31 electric railways. Of this total 1,447,576 ties were treated with preservatives to retard decay. This is about 7% of the total, against 10% in 1913.

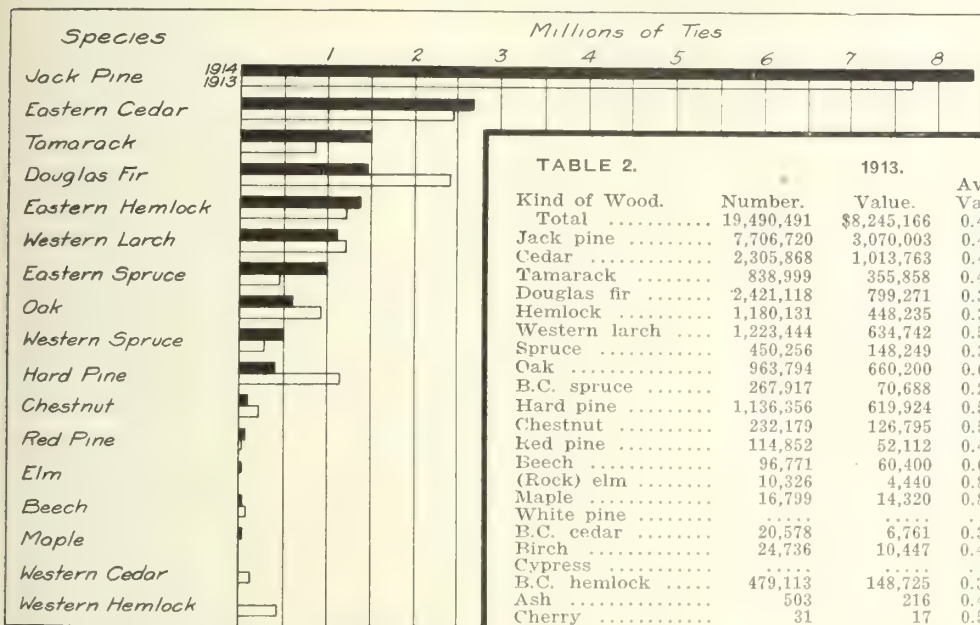
Table 1 gives details of the ties bought in Canada in 1913 and 1914, by kinds of wood. The cross tie purchases in 1914 showed a slight decrease of 2.4% from those of 1913, while the decrease from 1912 to 1913 was 6.7%. The diagram inserted in this bulletin shows the purchases increasing steadily up to 1912 when they amounted to over 21,000,000 ties. The greatest decreases from 1913 to 1914 were with the western species. Douglas fir, western larch, cedar and hemlock, and the imported woods such as oak, hard pine and chestnut. Of the 21 woods

TABLE 1.

Kind of Wood.	Number.	1913.			1914.		
		Value.	Av. Val.	Per cent.	Value.	Av. Val.	Per cent.
Total	19,881,714	\$8,740,849	0.43	100.0	19,403,646	\$8,664,914	0.45
Jack pine	7,773,674	3,103,140	0.40	39.1	8,379,064	3,624,151	0.43
White cedar	2,451,527	1,090,436	0.44	12.3	2,651,319	1,279,100	0.48
Tamarack	866,231	369,666	0.43	4.4	1,507,902	661,717	0.41
Douglas fir	2,427,100	801,710	0.33	12.2	1,456,388	539,249	0.37
Hemlock	1,199,699	455,662	0.38	6.0	1,330,885	576,440	0.41
Western larch	1,225,956	636,631	0.52	6.2	1,121,347	459,643	0.41
Spruce	458,256	151,049	0.33	2.3	1,020,667	379,841	0.37
Oak	978,554	673,244	0.69	4.9	617,449	483,496	0.78
B.C. spruce	267,917	70,685	0.54	1.3	517,919	202,234	0.37
Hard pine	1,138,351	621,032	0.55	5.7	378,983	263,215	0.69
Chestnut	232,179	126,795	0.55	1.2	104,980	69,091	0.66
Red pine	114,852	52,112	0.45	0.6	81,979	30,923	0.38
Elm	13,674	6,421	0.47	0.1	33,307	27,030	0.81
Beech	96,923	60,552	0.62	0.5	32,637	25,331	0.78
Maple	16,860	14,381	0.85	0.1	22,449	19,995	0.89
White pine	.....	.....	.....	.....	14,165	6,446	0.46
B.C. cedar	115,578	77,328	0.67	0.6	13,817	4,554	0.33
Cypress	.....	.....	.....	.....	13,216	5,873	0.44
Birch	24,736	10,447	0.42	0.1	11,018	5,293	0.48
Western hemlock	479,113	148,725	0.31	2.4	4,019	1,246	0.31
Ash	503	216	0.43	*	106	16	0.43
Cherry	31	17	0.55	*	.....	.....	.....

\*Less than one tenth of one per cent.

Table 2 shows the ties bought by steam miles of steam railway right of way. On



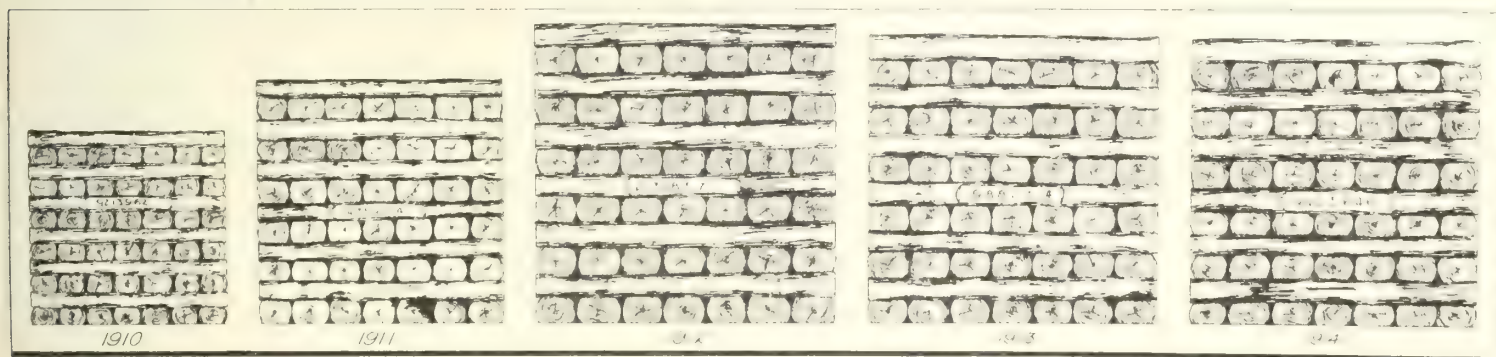
Cross Ties Purchased in 1913 and 1914.

TABLE 2.

Kind of Wood.	Number.	1913.			1914.		
		Value.	Av. Val.	Per cent.	Value.	Av. Val.	Per cent.
Total	19,490,491	\$8,245,166	0.42	100.0	19,196,208	\$8,545,057	0.45
Jack pine	7,706,720	3,070,003	0.40	39.5	8,355,518	3,610,885	0.43
Cedar	2,305,868	1,013,763	0.44	11.8	2,574,920	1,232,925	0.48
Tamarack	838,999	355,858	0.42	4.3	1,478,512	646,674	0.44
Douglas fir	2,421,118	799,271	0.33	12.4	1,452,238	537,374	0.37
Hemlock	1,180,131	448,235	0.38	6.1	1,369,376	566,502	0.41
Western larch	1,223,444	634,742	0.52	6.3	1,121,347	459,643	0.41
Spruce	450,256	148,249	0.33	2.3	1,019,249	378,989	0.37
Oak	963,794	660,200	0.69	4.9	602,291	469,828	0.78
B.C. spruce	267,917	70,688	0.26	1.4	547,919	202,234	0.37
Hard pine	1,136,356	619,924	0.55	5.8	356,473	250,614	0.70
Chestnut	232,179	126,795	0.55	1.2	104,980	69,091	0.66
Red pine	114,852	52,112	0.45	0.6	81,979	30,923	0.38
Beech	96,771	60,400	0.62	0.5	32,637	25,331	0.78
(Rock) elm	10,326	4,440	0.85	0.1	28,973	24,627	0.85
Maple	16,799	14,320	0.85	0.1	22,449	19,995	0.89
White pine	.....	.....	.....	.....	14,165	6,446	0.46
B.C. cedar	20,578	7,671	0.33	0.1	12,609	4,035	0.32
Birch	24,736	10,447	0.42	0.1	11,018	5,293	0.48
Cypress	.....	.....	.....	.....	5,430	2,356	0.43
B.C. hemlock	479,113	148,725	0.31	2.5	4,019	1,246	0.31
Ash	503	216	0.43	*	106	16	0.43
Cherry	31	17	0.55	*	.....	.....	.....

\*Less than one tenth of one per cent.

railways in Canada in 1913 and 1914. In June 1914 there were in Canada about 38,000 over 32,000 miles of this trains were in operation, and on the remainder ties at least were laid. The steam railways bought in that year 19,196,208 ties, being about 500 to



Cross Ties Purchased in Canada in Five Years, 1910-1914.

TABLE 5.

Kind of Wood.	Number.	1913.			1914.		
		Value.	Av. Val.	Per cent.	Value.	Av. Val.	Per cent.
Total	391,223	\$225,086	0.58	100.0	207,438	\$119,857	0.58
Cedar	145,659	76,673	0.63	37.2	76,399	46,175	0.60
Tamarack	27,232	13,808	0.51	7.0	29,390	15,043	0.51
Jack pine	66,954	33,137	0.49	17.1	23,546	13,266	0.56
Hard pine	1,995	1,108	0.55	0.5	22,510	12,601	0.56
Hemlock	19,563	7,427	0.38	5.0	21,509	9,338	0.46
Oak	14,760	13,044	0.88	3.8	1,118	13,668	0.90
Cypress	.....	.....	.....	.....	7,816	3,517	0.45
Elm	3,348	1,981	0.59	0.9	4,331	2,403	0.55
Douglas fir	5,982	2,439	0.41	1.5	1,150	1,875	0.45
Spruce	8,000	2,800	0.35	2.0	1,118	852	0.60
B.C. cedar	95,000	70,567	0.74	24.3	1,208	1,118	0.13
Western larch	2,512	1,889	0.75	0.6	.....	.....	.....
Beech	152	152	1.00	*	.....	.....	.....
Maple	61	61	1.00	*	.....	.....	.....

\*Less than one tenth of one per cent.

reported in 1914 eleven showed decreases.

Jack pine makes the most suitable tie material of the cheaper, more abundant woods of Canada. It has headed the list since 1911 when it took the place of white cedar, a more durable wood, but one of which the supply is rapidly becoming exhausted. These two woods have formed the greater part of the ties purchased in past years, and together formed over half the total in 1914.

The average prices paid for ties by the railways in 1914 showed only a slight increase over 1913. The prices in the last five years have been as follows,—1910, 38 c.; 1911, 39 c.; 1912, 44 c.; 1913, 43 c.; 1914, 45 c.



the mile. A large proportion of these were used for new construction at the rate of about 3,000 ties to the mile, and the remainder for maintenance of established lines. These companies paid an average of 45c. each for their ties against 58c. by the electric railways. The steam railways with 98.9 per cent. of the total for 1914 purchased all the ties of western larch, western spruce, chestnut, red pine, beech, maple, white pine and birch.

Table I shows the ties bought in 1913 and 1914 by electric railways. These lines bought 207,438 ties or about 1.5% of the total. These roads had a mileage of 1,561 in June 1914,

and therefore bought ties at the rate of 133 per mile. These purchases were mostly used for renewals, for which the demand is not so heavy as in the case of steam railways. The total number in this case is a decrease of 47% from 1913, while the average price per tie is the same. The greatest decreases were with western and eastern cedar and jack pine. Eleven woods were reported in 1914, and 15 in 1913, western larch, beech, maple and white pine being dropped from the list.

The foregoing bulletin was prepared by the Interior Department's Forestry Branch, R. H. Campbell, Director of Forestry.

## An Outline of a Year's Work for Roadmasters.

By T. Hickey, Roadmaster, Michigan Central Railroad, St. Thomas.

Since methods of arranging track work vary by reason of the extremes in climate and other conditions, it is necessary to fully consider methods that will best serve different conditions.

**Summer Work.**—It is good practice to hire and take on the summer forces on sections as early as conditions will allow. By so doing a better class of labor can be secured than could be later, as good men are sure to find employment elsewhere. The efficiency obtained from doing work early in the season is to be noted with marked results.

After first getting the track in reasonably good condition for surface and line, the work of tie renewals is begun. The constantly increasing cost of new and suitable ties, coupled with their growing scarcity, makes it imperative that they be handled with the greatest circumspection and care. To reduce the waste should be encouraged. A matter of great importance in the renewal of ties is to fully determine what ones should be taken out and what ones can safely be left in track for another year. Much can be done during the process of renewal to shorten or lengthen the life of the tie.

Tie tongs should be used instead of picks; if placed heart side down the fibres of the timber tend to shed water away from the inner timber. Spike holes should be carefully plugged. A special effort should be made for good results to get tie renewals made as early in the season as possible. By doing so they will have a better bearing in track and it will be found that track will remain in better condition after being surfaced.

After the work of tie renewals is completed, surfacing track should be commenced and continued. It is best to begin surfacing at the further end of the section and work towards headquarters. The secret of putting track in good condition, that will so remain for a reasonable length of time is one which largely depends on having the men well organized and in getting them to do the work as nearly alike as possible. Foremen when surfacing should test their level boards before commencing work every morning and know that they are accurate.

Ties should be tamped with tamping picks on stone ballast and with tamping bars on other ballast. The ends of the ties, and for 18 ins. inside of the rail and well under the rail, should be thoroughly tamped and the centre of the tie tamped with shovel blade. All spikes should be tamped down tight to the rail ahead of the surfacing. This will insure having ties tight to the rail when tamping and will eliminate creeping of rails. Foremen should see that all joints are full bolted and that they are tight as they proceed with the surfacing.

The track surfaced each day should be lined and trimmed and finished.

The work of mowing the right of way should be commenced on or about July 1, or before the weeds go to seed, it depending largely on the different climates, as to when the work can be done best. After the mowing is completed, the material should be burned. When burning is properly done, the starting of fires on the right of way and the spreading of same to adjacent property is eliminated. Time is well spent in thoroughly burning over the right of way. Much time is afterwards saved for the men in going to and fighting fires, as well as preventing fire claims against the company.

The surfacing of track should, for good results, be completed on or about Sept. 1 so that the men will have an opportunity to go over and carefully examine the track and take care of such spots as may be found out of surface and line. This work properly done will insure track going into winter in good condition from which it is reasonable to assume that better track conditions will exist during the winter.

**Autumn Work.**—Estimates should be made of the necessary material for repairs and for renewals for the next year; rail, ties, switch material, switch timbers, crossing plank, fence material, etc. In making this estimate, the condition of the different materials in use should first be carefully and fully examined, particularly so that of ties. The number of ties for tie renewals at the time of making the estimate should be considered as well as at the time of making renewals. Each tie condemned or intended to be taken out of track the next year should be marked. This mark can best be made by an axe or an adze. They should be all marked in about the same place so that other officials who may wish to examine may know where to look and readily find such marks. A matter of great importance in the inspection of ties for renewals is to determine what ones should be condemned, or what ones should be left in track with safety that would last another year. Several weak ties should not be allowed to remain together in track. Decayed ties should not be allowed to remain in curved track. A tie partly decayed in a tangent will sometimes last much longer with safety than on a curve. Thus a tie may be considered safe for one more year in one place where it would not be so considered in another. This matter is one that should be considered and care should be exercised not to injure good ties when testing for renewals.

Thoroughly good drainage is one of the most essential features of first class track. To accomplish it ditches should be well constructed and so maintained. Where an open ditch cannot be properly maintained,

tile should be used. When tile is used, grade stakes should be set in order to obtain the required depth. They should be covered with cinders or other porous material. Branch tiling should be laid at intervals from the main line of tile extending toward the track and be so laid as to be below the track ballast. Tile drains should be used in yards and at all points where necessary for proper drainage of tracks and switches, and be provided with catch basins securely covered with metal grating. It is important that yards be provided with proper and perfect drainage. The saving in labor and delay to traffic during the winter in keeping switches and interlockings in working order would soon pay for a proper drainage system.

General cleaning up of station grounds and right of way should be done and all material and scrap picked up and placed in proper places assigned for same before snow falls. Snow plow markers should be got ready and erected at points where required. Snow plows, flangers and other equipment for fighting snow should be put in proper condition, together with the necessary tools and placed on tracks where they can be readily got. Snow fences and other means that may be used for the preventing of snow drifting should be erected.

**Winter Work.**—During the winter the work of putting track to accurate gauge should be done. All ties should be full spiked, all bolts tightened and all joints full bolted. The necessary repairs should be made to right of way fences. This work can be done to advantage during the winter as there is more or less sod and grass around fence posts which prevents frost from readily entering the ground that would prevent such work. Such work when done during the winter will not interfere with the spring and summer's work.

Particular attention should be given to see that ditches are kept open, where the same get filled with snow, to insure a free passage for water. Other waterways should have proper attention to know that they are not obstructed by ice or other material. Ice should be kept out from around piling at bridges. It is a good practice to do as much work during the winter as can be done with economy. The advantage to be gained is that the track forces will not be reduced to a minimum. The work so done is going to help out with the summer's work.

In the spring each foreman should have at least a certain number of good experienced men to commence his summer's work with. He has done a large amount of work during the winter which he will be free from in the spring. He can, therefore, proceed with less men than if he had not done such work during the winter. Another marked advantage in working an additional man to help to do this work is the fact that a better class of men will be found in the service and the roadmaster will have much better material from which to select foremen. The selection of good foremen is getting to be quite a problem. I feel that this method would be an encouragement to get and hold good men in the service and get efficiency.

We cannot be reminded too often of the necessity of extra precautions for the protection of the traveling public, our fellow workmen and ourselves. Safety of the track is all important, but we must have intelligent safety or safety that is not wasteful either in labor or material.

**Spring Work** should begin as soon as the frost is out of the roadbed. The condition of the track where shimmed should have close attention and be closely watched while the frost is coming out. In order to



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keep the track in good condition, the thick  
shims should be replaced by thinner ones  
as fast as the heaved roadbed settles. This  
work should be continued until the shims  
have all been removed from the track.

When the snow has disappeared, each  
foreman should make a general and thor-  
ough search for scrap which has accumu-  
lated during the winter from the different  
sources, much of which has been covered  
with snow. It should be carefully sorted  
and that which is found to be serviceable  
for use should be taken care of and that  
which is only fit for scrap should be col-  
lected and placed in scrap pile.

As soon as the ground becomes dry  
enough the work of cleaning up station  
grounds, yards and right of way should be  
proceeded with, and the refuse material  
disposed of to best advantage. Pile up  
neatly all track and other material in prop-  
er places. All refuse material that has ac-  
cumulated during the winter, including  
cinders, should be removed from tracks  
and from around buildings and from com-  
pany's stock yards.

All switches, leads and guard rails should  
be carefully examined and properly se-  
cured. Many parts may be found to be  
slightly out of adjustment and may not be  
readily noticed while being partly covered  
by snow and ice. Close inspection should  
be made of all foot guard blocking and  
repairs found necessary should be prompt-  
ly made.

The different kinds of work mentioned  
above, when taken care of at this time of  
the year, will enable the track force to  
make much progress when the summer  
work begins.—Maintenance of Way Bulet-  
tin.

## Nominations for Canadian Society of Civil Engineers' Officers.

G.H.Duggan, First Vice President, Domi-  
nion Bridge Co., Montreal, has been nomi-  
nated as President of the society for 1916.  
J.G.Legrand, Bridge Engineer, Grand Trunk  
Pacific Ry., Winnipeg, and T. H. White,  
Chief Engineer, Canadian Northern Pacific  
Ry., Vancouver, have been nominated for  
the vice presidency. The following nomi-  
nations have been made for councillors:—  
District 1—J.Duchastel, W.J.Francis, H.R.  
Safford, Chief Engineer, Grand Trunk Ry.,  
J.C.Smith, Montreal. District 2—J.L.Allan,  
Halifax and Eastern Ry., Dartmouth, N.S.;  
H.Donkin, Halifax, N.S. District 3—A.E.  
Doucet, ex District Engineer, National  
Transcontinental Ry., Quebec; L.A.Vallee,  
Engineer and Director of Railways, Pro-  
vince of Quebec. District 4—E.D.Lafleur,  
Chief Engineer, Public Works Department,  
Ottawa; W.P.Wilgar, Kingston, Ont. Dis-  
trict 5—J.R.W. Ambrose, Chief Engineer,  
Toronto Terminals Ry. Co.; A.L.Hertzberg,  
Division Engineer, C.P.R., Toronto. Dis-  
trict 6—C.H.Dancer, D.A.Ross, Winnipeg.  
District 7—D.O.Lewis, District Engineer,  
Canadian Pacific Ry., Victoria, B.C.; A.  
O'Meara, Victoria, B.C. Two members of  
council are to be elected for district 1, and  
one member for each of the other districts.

**A Windsor Freight Case.**—The American  
Coal & Coke Co. complained in May last  
that the Michigan Central Rd. unjustly dis-  
criminated against it and unduly prejudiced  
it by refusal to extend credit to it with re-  
spect to freight and demurrage charges ac-  
crued on carloads of coal held at Windsor,  
Ont., and Detroit, Mich., while extending  
credit to competitors under like circum-  
stances. The Commission has decided that  
the evidence fails to show that complain-  
ant is discriminated against or prejudiced  
within the meaning of the act.

## Alberta Public Utilities Commission Appointed.

An Edmonton press dispatch, of Oct. 20,  
states that an order-in-council has been pass-  
ed appointing G.H.V.Bulyea, ex-Lieutenant-  
Governor of the Province, Chairman of the  
Alberta Public Utilities Commission, at a  
salary of \$7,200 a year; and John Stocks,  
heretofore Deputy Minister of Public  
Works, and Judge Carpenter, of the District  
Court, Calgary, as members of the Commis-  
sion at salaries of \$6,000 each. J.E.Riley,  
Calgary, has been appointed Secretary.

The Alberta Public Utilities Act was pass-  
ed last session of the Legislature, but was  
not to come into force until the appoint-  
ment of the Board. A summary of its pro-  
visions was given in Canadian Railway and  
Marine World for June, pg. 220.

## Canadian Northern Railway's Through Service From Toronto West.

The C.N.R. will, on Nov. 1, inaugurate a  
passenger train service between Toronto  
and Winnipeg, the most important inter-  
mediate points being Parry Sound, Sudbury,  
Nipigon, Port Arthur, Fort William, Fort  
Frances, and Rainy River. The service  
will be tri-weekly, the west bound train  
leaving Toronto Union Station Monday,  
Wednesday and Friday at 10.45 p.m., ar-  
riving at Winnipeg Union Station, Wednes-  
day, Friday and Sunday at 5.45 p.m., and  
connecting there with the Alberta Express  
leaving 10.30 p.m. daily for Edmonton and  
intervening points, and with the Capital  
Cities Express leaving 8 p.m. daily for  
Prince Albert and intervening points. The  
east bound train will leave Winnipeg Union  
Station, Monday, Wednesday and Saturday  
at 5.15 p.m., reaching Toronto Union Sta-  
tion, Monday, Wednesday and Friday at  
2.30 p.m. The new trains, it is announced,  
will have electric lighted standard sleeping  
cars, dining cars, first and second class cars,  
and electric lighted tourist sleeping cars  
will be added about Nov 25.

A freight service has also been estab-  
lished between Quebec, Montreal and To-  
ronto and other eastern points and Winni-  
peg.

## Progress of Rogers Pass Tunnel Con- struction, Canadian Pacific Railway.

The following table, for which we are in-  
debted to J. G. Sullivan, Chief Engineer,  
C.P.R., Winnipeg, shows the progress made  
from Sept. 2 to Sept. 30, also the total pro-  
gress to Sept. 30.

EAST END.	Progress.	Total.
Main heading .....	1,381 ft.	9,380 ft.
Main tunnel .....	672 ft.	6,578 ft.
WEST END.		
Main heading .....	1,151 ft.	10,020 ft.
Main tunnel .....	706 ft.	5,411 ft.

**A Railway Superintendent's Appreciation.**  
—R.S.Richardson, Superintendent, National  
Transcontinental Ry., Fort William, Ont.,  
writes: "I have been a subscriber to Cana-  
dian Railway and Marine World since 1901.  
Both myself and my staffs have been con-  
siderably benefited by your many articles  
of information, and I feel sure that all offi-  
cials appreciate the arrival of the paper.  
Proof of this is why it is on every official's  
desk."

**Western Canada Railway Club.**—At a  
meeting of the club in Winnipeg, Oct. 12,  
C.Murphy, General Superintendent, Mani-  
toba Division, Canadian Pacific Ry., spoke  
on the operation of railways, and J.B.Hugg,  
lecturer on municipal law at the Manitoba  
Law School, dealt with the regulation of  
public utilities by commissioners.



### Change in Standard Ballast Sections. Canadian Pacific Railway.

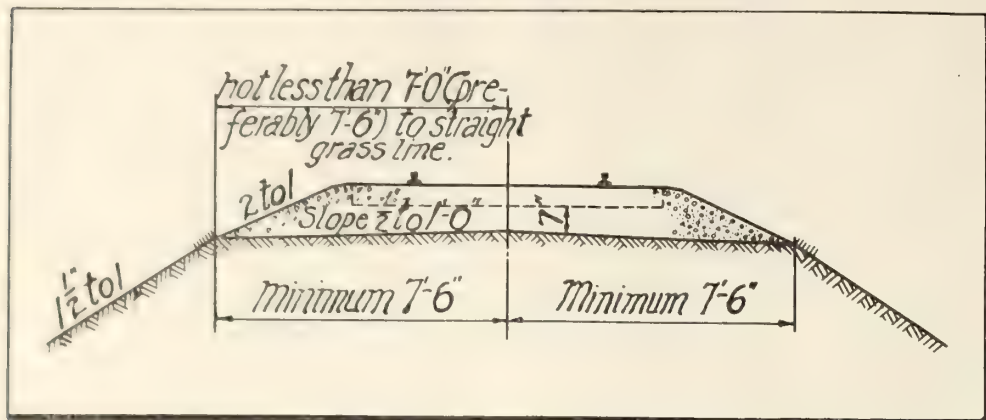
In the new standard plan of ballast sections just issued, by the Canadian Pacific Ry.'s Engineering Department, there are a number of changes from the previous

tion, which will enable trackmen to surface up track from time to time without having to deplete their ballast section for that purpose. The amount of ballast under the tie is 7 ins. and the section contains 3,000 cu. yds. of gravel per mile of single track and 5,300 cu. yds. per mile of double track.

The branch line gravel section has also

### National Transcontinental Constructio Suit.

Ottawa press dispatch, Oct. 18.—Action has been instituted in the local courts by O'Brien, McDougall and O'Gorman to recover \$220,000 from the Nipigon Construction Co. in connection with National Transcontinental Ry. contracts. In a counter action the Nipigon Co. claims 5% on all extras the O'Brien firm got from the N.T.R. Commission. The contract for 75 miles of the line north of Lake Nipigon, costing about \$3,000,000, was originally awarded to E.F. and G.E. Fauquier in 1908 and by them turned over to the Nipigon Co. on a 4% basis. The Nipigon Co. reserved to itself the building of the road to grade level and sublet to O'Brien, McDougall and O'Gorman the work from grade level to completion, on a further 5% basis. The latter's claim is based on an alleged delay of two years by the Nipigon Co. in bringing the line to grade level, and it is further claimed that some of the work was not properly done, the subcontractors having to carry out much of what should have been constructed by the Nipigon Co.



Branch lines gravel ballast sections, C.P.R.

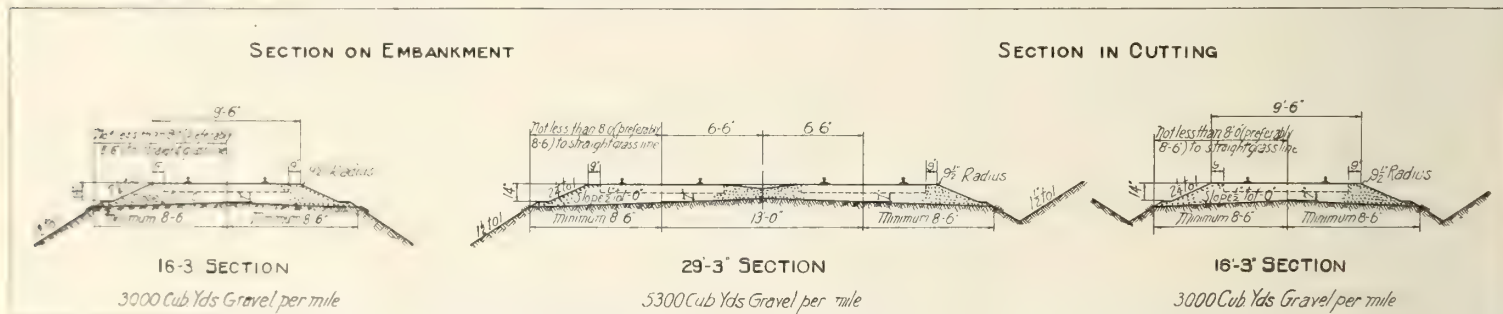
standard that are of interest. The broken stone ballast section remains the same as the old standard, except that the subgrades have been widened to a minimum of 17 ft. instead of 16 ft. as formerly for single track, and to 30 ft. instead of 29 ft. for double track. The amount of ballast under the tie is 7 ins., the side slopes 1½ to 1, and the shoulder at the tie is 6¼ ins. The section contains 2,500 cu. yds. broken stone

been changed from a rounded to a straight line section with a 2 to 1 slope, and the subgrade has been increased from 14 to 15 ft. in width.

We are indebted to J. M. R. Fairbairn, Assistant Chief Engineer, Eastern Lines, C.P.R. for the foregoing information.

Canadian Government Ry.'s Operating Results.—F.P. Gutelius, General Manager, is

Twin Cities Local Freight Agents' Association has been organized, embracing officials of Canadian Northern, Canadian Pacific and National Transcontinental Railways in Port Arthur, Fort William and West Fort William. The officers are G.H. Drowley, Agent, Canadian Northern, Port Arthur, President; C.E. Legg, General Agent, Canadian Pacific, Fort William, Vice Presi-



Gravel ballast sections, Canadian Pacific Railway.

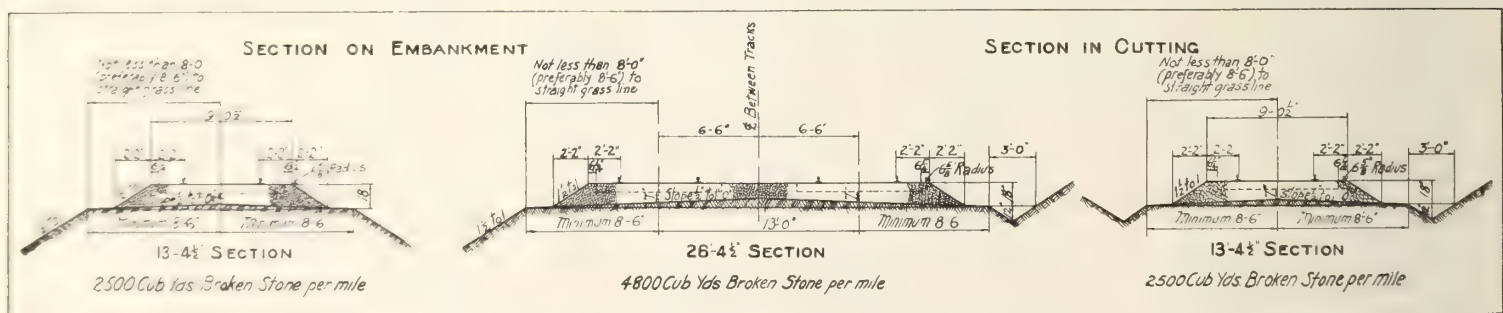
per mile for single track and 4,800 cu. yds. per mile for double track.

The gravel ballast section has been changed from a rounded to a straight line section, having a slope of 2¼ to 1 with a 9 in. shoulder against the tie and 7 ins. of ballast under the tie. The subgrade has been increased 1 ft. in width, making a 17 ft.

reported to have stated at Ottawa, Oct. 15, that the Intercolonial Ry. is doing better than last year, both freight and passenger earnings showing a considerable increase. In regard to the National Transcontinental Ry. he is reported to have said that while for the first few months it had run behind, the receipts from the grain traffic promised

dent; E.J. Travers, Fort William, Ont., Secretary-Treasurer.

The ninetieth anniversary of the opening of the first railway in the world was celebrated Sept. 27. On that date in 1825, the Stockton and Darlington Ry. was opened for public traffic between Stockton and Darlington, Eng. The locomotive was a four wheel-



Broken stone ballast sections, Canadian Pacific Railway.

base for single track and 30 ft. for double track, in place of 16 ft. and 29 ft., as formerly. The great advantage of this new form of section is that it allows a certain flexibility in the width of embankments to suit existing conditions, and also allows for a certain amount of storage on top of the embankment at the base of the ballast sec-

to equalize the revenue and operating expenses.

Government Employees on the harbor and terminal works at Port Nelson, Hudson Bay, in connection with the Hudson Bay Ry., have contributed \$3,650 to purchase machine guns at the discretion of the Minister of Militia.

ed one with a four wheeled tender, built by Stephenson and called Locomotion. It weighed about 14,675 lbs., and travelled at from 6 to 8 miles an hour. It is still in existence, but was put out of service in 1841, and has since been used for exhibition purposes, being shown in Philadelphia, Pa., in 1876.



# Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

**Canadian Northern Ry.**—W.J.CURLE, heretofore Superintendent, Lake Superior District, Capreol, Ont., has been appointed Assistant Superintendent, Toronto District, vice W.R.Kelly, promoted. Office, Rosedale, Toronto.

W.R.KELLY, heretofore Assistant Superintendent, Toronto District, Toronto, has been appointed Superintendent, Lake Superior District, including the Nipigon Subdivision to Current, vice W.J.Curle transferred to Toronto. Office, Capreol, Ont.

R.J.KELLY, heretofore Trainmaster on construction, has been appointed Trainmaster with jurisdiction over Ruel, Oba, Long Lake and Nipigon Subdivisions, Lake Superior District, vice A. J. Gayfer, Division Engineer and Trainmaster, who has been relieved of the duties of Trainmaster, and who, as Division Engineer, will have his office at Capreol, Ont. Office, Hornepayne, Ont.

E.H.DREW, heretofore dining car conductor, G.T.Pacific Ry., Winnipeg, has been appointed Inspector Sleeping, Dining and Parlor Car and News Department, Western Lines, C.N.R. Headquarters, Winnipeg.

W.A.WHITE, Assistant Freight Agent, Calgary, Alta., is reported to have been appointed District Freight Agent, Regina, Sask., vice B.R.Marsales, transferred.

C.H.WORBY, heretofore Inspector, Sleeping and Dining Cars, Winnipeg, has been appointed Sleeping and Dining Car Agent, Saskatoon, Sask.

B.R.MARSALES, District Freight Agent, Regina, Sask., is reported to have been appointed District Freight Agent, Calgary, Alta.

A. BROSTEDT, heretofore District Passenger Agent, Calgary, Alta., has been appointed District Passenger Agent, Vancouver, B.C.

**Canadian Government Railways.**—W.D. STEWART, whose appointment as Assistant to General Storekeeper, Transcona, Man., was announced in our last issue, was mentioned as having previously been foreman of erecting shop, Intercolonial Ry., Moncton, N.B., but we are officially advised that prior to his present appointment he was Stores Inspector, Intercolonial Ry. and branch lines of the Canadian Government Railways.

(See also Intercolonial Ry. and National Transcontinental Ry.)

**Canadian Pacific Ocean Services Ltd.**—J. A. MARTIN, heretofore Agent, Allan Line Steamship Co., Glasgow, Scotland, has been appointed Assistant Manager, Canadian Pacific Ocean Services Ltd. Office, Liverpool, Eng.

**Canadian Pacific Ry.**—A.C.MACKENZIE, heretofore Engineer Maintenance of Way, Eastern Lines, Montreal, has been appointed acting General Superintendent, Atlantic Division, vice H.C.GROUT, who has been granted leave of absence. Office, St. John, N.B.

C.T.DELAMERE, heretofore acting Engineer of Construction, Eastern Lines, Montreal, has been appointed acting Engineer Maintenance of Way, Eastern Lines, vice A. C. Mackenzie appointed acting General Superintendent Atlantic Division, and will also continue to handle the Construction Department work. Office, Montreal.

A.DOBSON, heretofore storekeeper, Havelock, Ont., has been appointed storekeeper, Trenton, Ont., vice J. Fairbairn enlisted for overseas military service.

J.HARVEY has been appointed storekeeper, Havelock, Ont., vice A. Dobson transferred.

C.LAVENDER has been appointed storekeeper, John St., Toronto, vice W.H.Bainbridge transferred.

W.H.BAINBRIDGE, heretofore storekeeper, John St., Toronto, has been appointed storekeeper, West Toronto, Ont., vice A. D. BAKER enlisted for overseas military service.

F. RONALDSON, heretofore Locomotive Foreman, Lambton, Ont., has been appointed District Master Mechanic, Farnham, Que., vice H. Pepler.

J.M.CAMPBELL, heretofore Resident Engineer, District 1, Manitoba Division, Kenora, Ont., and who was appointed Roadmaster, District 2, Manitoba Division, Winnipeg, recently, has joined the force of engineers which has left Canada to work on railways in Russia.

T.D.RUGGLES, who was appointed recently Resident Engineer, District 1, Manitoba Division, Kenora, Ont., vice J.M.Campbell, transferred, has resigned and E.L. LANDORPH, heretofore Resident Engineer, District 2, Manitoba Division, Winnipeg, has been appointed in his place. Office, Kenora, Ont.

D.J.HAGERTY, heretofore Trainmaster, Northern Pacific Ry., Missoula, Mont., is reported to have been appointed to a position in the Traffic Department, C.P.R., Saskatoon, Ont.

F.GRIFFIN, heretofore storeman, Winnipeg, has been appointed storekeeper, Ignace, Ont., vice A. Stanfield transferred to Swift Current, Sask.

A.STANFIELD, heretofore storekeeper, Ignace, Ont., has been appointed storekeeper, Swift Current, Sask., vice J.M.Coles, who has enlisted for overseas military service.

The position of Assistant General Freight Agent, Vancouver, B.C., heretofore held by R.E.LARMOUR, whose appointment as General Agent, Freight Department, New York, was announced in our last issue, has been abolished, and the duties have been assumed by H.A.PLOW, Division Freight Agent, Vancouver, for the rail lines, and by F.H.CLENDENNING, Division Freight Agent, Vancouver for the steamship lines.

We are officially advised that no appointment will be made to fill the position of Assistant Division Engineer, Vancouver, B.C., formerly held by H.B.SIMS, who is at present in Europe with the Canadian Overseas Railway Construction Corps, the position having been abolished.

**Dominion Atlantic Ry.**—George Bury, Vice President, issued the following circular, Oct. 25:—"P.GIFKINS, who has with so much zeal occupied the position of General Manager of the Dominion Atlantic Railway for the past 15 years, and who has been associated with the service of that Company for a full period of 44 years, having expressed a desire to relinquish the arduous duties connected with the important position now held by him, the company has yielded to his expressed wish, and effective Nov. 1 next, he will be placed on the retired list in order that he may secure well merited leisure."

GEO.E.GRAHAM, formerly on the Western Lines, C.P.R., and laterly General Manager, Coquitlam Terminal Co., Ltd., Vancouver, B.C., has been appointed General Manager, D.A.R. Office, Kentville, N.S.

**Grand Trunk Ry.**—H.HULATT, Re appointment of as Manager of Telegraphs. See above under Grand Trunk Pacific Ry.

W.WALKER has been appointed Assistant Land Commissioner, Montreal.

The following station agents have been appointed,—Uxbridge, Ont., A.M.St.John; Komoka, Ont., J.H.Stuart.

**Grand Trunk Pacific Ry.**—H.HULATT, heretofore Commercial and Traffic Superintendent of Telegraphs, and Superintendent of Time Service, G.T.P.R., Winnipeg, has been appointed Manager of Telegraphs, G.T.R. and G.T.P.R., vice A.B.Smith, who has resigned on account of ill health. For the G.T.R. he will report to, and receive instructions from, the Vice President in Charge of Operation, Montreal, and for the G.T.P.R., he will report to, and receive instructions from, the Vice President and General Manager, Winnipeg. Office, Montreal.

The position of Commercial and Traffic Superintendent of Telegraphs, Winnipeg, heretofore held by H.HULATT, now Manager of Telegraphs, Montreal, has been abolished.

F.T.CALDWELL has been appointed Division Superintendent of Telegraphs, Lines Cochrane and west in Ontario, Manitoba, and Saskatchewan, with jurisdiction over all matters pertaining to construction and maintenance of telegraph and telephone lines and the operation of railway and commercial telegraphs. Office, Winnipeg.

F.T.CALDWELL, Division Superintendent of Telegraphs, Winnipeg, has also been appointed Superintendent of Time Service, vice H.Hulatt promoted.

W.J.ROONEY, heretofore Superintendent of Telegraph Plant, G.T.Pacific Ry., Winnipeg, has been appointed Division Superintendent of Telegraph, Lines in Alberta and British Columbia, with jurisdiction over all matters pertaining to construction and maintenance of telegraph and telephone lines, and operation of railway and commercial telegraphs, and his former position has been abolished. Office, Edmonton, Alta.

The following station agents have been appointed,—Waldron, Sask., G.A.Swan; Cudworth, Sask., M.Thornton; Springwater, Sask., J.T.Kerr; Trochu, Alta., J.B.Frevel.

**Intercolonial Ry.**—W.H.PIERIE, heretofore charge hand, has been appointed Car Foreman of Shops, Halifax, N.S., vice D.W. Murray assigned to other duties.

J.W.COADY, heretofore passenger car carpenter, has been appointed charge hand, Halifax, N.S., vice W.H.Pierie promoted.

W.R.FITZMAURICE, heretofore Assistant Superintendent, Moncton-St. Flavie District, Newcastle, N.B., has been appointed acting Superintendent, District 2, vice Evan Price deceased. Office, Campbellton, N.B.

C.D. BOVARD, heretofore station agent, Moncton, N.B., has been appointed acting Assistant Superintendent, District 2, vice W. R. Fitzmaurice promoted. Office, Campbellton, N.B. See also Canadian Government Railways.

**National Transcontinental Ry.**—H.M.BIRD has been appointed acting Trainmaster, District 3. Office, Graham, Ont.

H.J.BLACK, heretofore Resident Engineer, C.P.R., Sudbury, Ont., has been appointed Resident Engineer, District 2, N.T.R., between O'Brien and Superior Jct., vice J.E. Gibault, transferred. Office, Cochrane, Ont.

J.E.GIBAULT, heretofore Resident Engineer, District 2, Cochrane, Ont., has been appointed Resident Engineer, District 1, vice A.Babin. Office, Quebec.

See also Canadian Government Railways. **Quebec Central Ry.**—GEORGE BURY, Vice President, Canadian Pacific Ry., has also been elected President of the Q.C.R., vice D.McNicol.



**Toronto, Hamilton and Buffalo Ry.—R.F. Hill,** heretofore chief clerk, General Freight and Passenger Agent's office, has been appointed Assistant General Freight and Passenger Agent, Office, Hamilton, Ont.

**Winnipeg Joint Terminals.—J.W. Glover,** heretofore Night Yardmaster, has been appointed General Yardmaster, vice W. McAuley, whose appointment as Trainmaster was announced in our last issue.

**W. BOATES** has been appointed Night Yardmaster, vice J.W. Glover promoted.

The Eastern Canadian Passenger Association has changed its constitution by providing for a general baggage agents' committee to consider all matters pertaining to baggage or traffic that may be referred to it by the Association. For the current year the committee is composed of the general baggage agents or other officers in charge of baggage departments of the Canadian Government, Canadian Northern, Canadian Pacific, Grand Trunk, Michigan Central and New York Central Railways. The Chairman is R.L. Fairbairn, General Passenger Agent, Eastern Lines, Canadian Northern Ry.

The American Association of General Baggage Agents' annual convention was held at Kansas City, Mo., Oct. 13 and 14, when the main subject discussed was the matter of baggage rules. Five standing committees were appointed to consider the subjects of standard baggage rules, arbitration, baggage checks, standard forms for office methods and accounting, and telegraph code. The officers for the current year are, —J.F. Dugan, Baltimore and Ohio, President; J.E. Quick, Grand Trunk and Grand Trunk Pacific, Toronto, Secretary-Treasurer. The next annual convention will be held at Boston, Mass., June 21, 1916.

Milk Shippers applied to the Board of Railway Commissioners recently for a reconsideration of the order requiring shippers to supply a man to assist in unloading empty milk cans and the question of general handling of the same by railways. In notifying the railway companies of this the Board of Railway Commissioners stated that the companies would be required to show cause why a general order should not issue fixing the minimum number of milk cans requisite, or the minimum car load rate necessary, to entitle a shipping station to a separate car.

Three informations were laid Oct. 6, against Canadian Northern Ry. officials at Regina, Sask., under sec. 90 of the Sales of Liquor Act passed last session of the Legislature. The informations charge the company with running its trains through the province without showing the necessary signs provided for in the regulations made under the Act.

**Taxing U. S. Railways Offices.—**The Toronto Court of Revision affirmed the business assessment of several United States railway companies having offices in the downtown district. It was contended on behalf of the companies that the offices were only information bureaus for the convenience of the public and that no business was done in them.

**Machinery Freight Rates to Espanola.—**The Spanish River Pulp and Paper Mills, Sault Ste. Marie, Ont., complained to the Board of Railway Commissioners recently that the C.P.R. refused to apply the Sault Ste. Marie, Mich., commodity rate of 25¢ per 100 lbs. on machinery from Massachusetts points to Espanola, Ont.

The Caledonia Springs Hotel, Caledonia Springs, Ont., which has been operated for some years by the Canadian Pacific Ry., has been closed permanently.

## Express Rates From London Confirmed by the Board of Railway Commissioners.

Commissioner McLean has given the following judgment, which was concurred in by the Chief Commissioner, Sir Henry L. Drayton:—

In the complaint launched by the London Board of Trade, it was alleged that discrimination was shown in favor of Toronto in express charges from that city in comparison with those charged from London. In support of this contention, the following examples of rates were given: Toronto to Brantford, 63 miles 50c; London to Brantford, 50 miles, 60c. At the hearing, supplemental detail with reference to the discrimination complained of was submitted in the following statement of rates:

Toronto to Brantford .....	58 miles—50c.
London to Brantford .....	56 " —60c.
Toronto to Woodstock .....	88 " —60c.
London to Woodstock .....	27 " —40c.
Toronto to Ingersoll .....	97 " —75c.
London to Ingersoll .....	20 " —40c.
Toronto to Tilsonburg .....	96 " —75c.
London to Tilsonburg .....	40 " —50c.
Toronto to Berlin .....	63 " —60c.
London to Berlin .....	59 " —60c.
Toronto to Paris .....	71 " —60c.
London to Paris .....	48 " —50c.

In the complaint as launched it was stated that the express companies claimed that the rate from Toronto was lower because they obtained more business from Toronto. The express companies in their answer said that the rate has not been made lower from Toronto than from London because of difference in amount of business involved. In the Board's investigation in the Express Case, a revision of the rates was made. The revision of the standard rate brought down those in excess of the standard. In a considerable number of instances, the rates actually in operation were because of special conditions or some accident in the development of the rate lower than the standard rates as approved. The tariffs have been checked and show that there are a large number of rates which on account of special conditions are lower than the standard. At the time the standards were approved the express companies desired to level up the existing rates, but the Board took the position that existing rates should not be increased. There is, therefore, a disparity in the rates charged as shown in the statement above set out. The express companies stated their willingness to remove the alleged discrimination by restoring all the rates in the section in question to standard. The result of this would be to increase a large number of existing rates affecting places whose positions have not been developed before us.

While there is in respect of particular places the difference in regard to rate basis which has been shown, it is not established that the merchants of London, on whose behalf the complaint is launched, are injured thereby. A mere statement as to rates is not conclusive as showing the existence of unjust discrimination or undue preference. There must be evidence of the traffic moving and the effect thereon. Further, the discrimination must be one creating an actual detriment. In the tabular statement furnished, the complaint turns on the Toronto rate basis being lower for a longer distance. It was not, however, in any way established that business which was naturally tributary to the London merchants had been taken away from them because of the lower rate basis enjoyed by Toronto. In other words, it has not been shown that business which would naturally go to London has been taken to Toronto by a difference in rates. The rates for equivalent distances out of Toronto and London have been checked, and it would appear from the

following statement that the rates are the same for the same distances:

Toronto to Woodstock .....	88 miles—60c.
London to Hornby .....	87 " —60c.
Toronto to Ingersoll .....	97 " —75c.
London to Belle River .....	95 " —75c.
Toronto to Tilsonburg .....	96 " —75c.
London to Streetsville .....	94 " —75c.
Toronto to Berlin .....	63 " —60c.
London to Guelph .....	73 " —60c.
Toronto to Paris .....	71 " —60c.
London to Hamilton .....	75 " —60c.

Reference has been made to the fact that in a very considerable number of cases the rates charged are below what would apply if the standard rates were charged. As indicative of this the following summaries show cases where on the movement out of London, London may reach various points on rates below the standard rates:

Where the rate charged is 75c. and the standard rate is 90c.—Summerville, Islington, Lambton, West Toronto, Parkdale, North Toronto, Toronto, Snelgrove, Mooretown, Corunna, Courtright, Watson, Sombra, Windsor, Cooksville, Dixie.

Where the rate charged is 60c. and the standard rate is 75c.—Guelph, Campbellville, Christies, Milton, Hornby, Lisgar, Fergus, Elora, Moffatt, Corwhin, Arkell, Prison Farm, Guelph, Harriston.

Where the rate charged is 50c. and the standard rate is 60c.—Dumfries, Galt, Chatham, Leslie.

Where the rate charged is 40c. and the standard rate is 50c.—Woodstock, Innerkip, Blandford, Drumbo, Wolverton, Putnam, Harrietsville, Glencoe, Newburg.

To bring up to standard all rates now below standard would dislocate the rate situation; and it does not appear that this would be of appreciable advantage to shippers. In the absence of any evidence that the existing rate situation works to the detriment of London merchants by taking from them business which would normally go to them and by transferring it on account of the rate difference to Toronto merchants, the Board is unable to find that the existing situation works an unjust discrimination.

**Russian Military Railway Construction.—**About 100 men left Winnipeg, Oct. 9, to meet others at various points en route to Montreal, where it was estimated there will be altogether between 500 and 600 men. Thence they were to proceed to New York, and sail for Archangel, Russia. They have been engaged for railway construction work by the Russian Government.

The C.P.R. freight department at Winnipeg notified agents Oct. 13 to at once cease accepting package freight to the east via Fort William when routed via steamships of lake lines, viz., Canada Steamship Lines, Great Lakes Transportation Co., Mutual Transit Co., on account of the close of the navigation season.

In an action in the Alberta Courts, Justice Stewart has decided that the C.P.R. has no lien on the crops of lands sold by it under deferred payments. The interim injunction obtained against three persons was dismissed and the company ordered to pay the costs.

**Canadian Pacific Ry. Employees in Toronto** and district, who organized recently for the purpose of making monthly contributions for patriotic purposes, have subscribed \$500 to the Toronto and York County Patriotic Association.

The Grand Trunk Pacific Ry. is about to remove its Winnipeg city ticket office from 260 Portage Ave. to the corner of Portage Ave. and Main St., at present occupied by the Gordon-Mitchell Drug Co.



## Railway Development.

### Projected Lines, Surveys, Construction, Betterments, Etc.

**Alberta and Great Waterways Ry.**—R. W. Jones, Chief Engineer of the Alberta Department of Railways, returned to Edmonton, Oct. 4, after an inspection of the railways under construction in the northern part of the Province. He is reported to have said that tracklaying had been completed on the A. and G.W. Ry. to mileage 135, or 21 miles north east of Lac La Biche, and that grading had been completed on 141 miles of the distance between Lac La Biche and Fort McMurray. The uncompleted grading is between mileage 203 and 215, and some miles on the Clearwater Valley. The work on the latter section is rather heavy. The route from the present end of steel runs northeasterly to the west end of Clearwater Lake, and thence in a generally northerly direction, crossing the Christina River and passing west of Sharp Point until it reaches the confluence of the Christina and Clearwater rivers. The line then gradually descends, on a 1% gradient, the valley of the Clearwater River, the banks of which are 200 ft. high, the valley being from two to three miles wide, until it reaches Fort McMurray. It is expected that grading will be completed early in November. Ballasting has been completed to Lac La Biche, and it was expected to have the ballasting to the present end of steel completed by Oct. 31. (Oct., pg. 392).

**Athabasca and Fort Vermillion Ry.**—A. C. Galbraith, Chief Engineer, is reported to have said at Athabasca Landing, Alberta, Oct. 1, that the engineering party engaged in making the reconnaissance survey left Wabiscaw, Aug. 26, and was expected to reach the proposed terminus at Fort Vermillion, Oct. 31. From the partial reports sent in the work has proceeded satisfactorily. (Oct., pg. 392).

**The Burrard Inlet Tunnel and Bridge Co.'s** directors were informed by the British Columbia Government, Oct. 15, that the question of the building of the projected bridge across the Second Narrows at Vancouver would be taken up as soon as J.W. Stewart, of the Pacific Great Eastern Ry. returned to Vancouver. (Oct., pg. 392.)

**Dominion Government Railway to Hudson Bay.**—A couple of bad sink holes are reported to have developed at mileage 208, and to have delayed the progress of work. Otherwise it is said to be proceeding satisfactorily.

Owing to reported gold discoveries in Northern Manitoba, a suggestion has been made that a line be built from Pas, and it is stated that the 15 mile branch could be built for \$150,000. The Provincial Government will, it is said, consider the building of the line if the Dominion Government decides not to undertake it. (Oct., pg. 392).

**Edmonton, Dunvegan and British Columbia Ry.**—The branch line from Spirit River to the Grande Prairie Settlement starts at the Spirit River Settlement, crosses the Burnt River, Bad Seal River, and the wagon road from Dunvegan to Lake Saskatoon, and passes by Lake Clermont to Grand Prairie City on the Beaver River, 60 miles. The maximum gradient is 1%, and the maximum curvature six degrees. We are officially advised that the construction is easy, the only difficult piece of work being at the crossing of the Saddle Mountain. The grading is 60% completed and should be finished by Nov. 30. Tracklaying is expected to be completed by Feb., 1916. J. Timothy is the contractor, and W. R. Smith, Edmonton, Chief Engineer.

On the main line from the Big Smoky River to the Spirit River, some delays have been experienced owing to slides on the east bank, but it is confidently expected that steel will be laid on the 67 miles early in 1916. While a regular passenger service is being operated between Edmonton and McLennan, a contractor's service is being operated from McLennan to Smith's Settlement. (Oct., pg. 392).

**Farnham and Granby Ry.**—Application is being made to the Dominion Parliament for an extension of time for the building of the projected line from the C.P.R., near Farnham, easterly to Granby, and thence northeasterly to Windsor Mills or Richmond, Que. Major C.L. Herve, M.Can.Soc.C.E., Montreal, who is now in England with the Canadian Overseas Railway Construction Corps, is one of the provisional directors. The solicitors for the applicants are Pringle, Thompson, Burgess and Cote, Ottawa. (April, 1914, pg. 165.)

**Grand Trunk Pacific Ry.**—Collingwood Schrieber, General Consulting Engineer to the Dominion Government, left Winnipeg, Sept. 28, to make one of his periodical trips of inspection over the line to Prince Rupert, B. C.

The trestle bridge over the Minnewastie River, near Uno, Man., which was blown down by a cyclone early in September, has been rebuilt and was reopened for traffic, Sept. 29. It is 1,700 feet long, and 135 feet high. Pending reconstruction the regular train service was operated over the C.P.R.

E.J. Chamberlain, President, is reported to have stated that it is expected to proceed with the construction of the terminal facilities at Regina, and three other points in Saskatchewan, under the agreement with the Provincial Government, early next spring. (Aug., pg. 307).

**Grand Trunk Ry.**—The question of the elevation of the tracks in Montreal came before the Board of Railway Commissioners at Montreal, Sept. 28. After hearing statements from the city and the company, Sir Henry Drayton, Chief Commissioner, intimated that if it could be shown how funds could be raised for the purpose the company would be glad to go on with the work. In the present financial situation it was impossible to order the company to proceed. The Chamber of Commerce meeting in Montreal, Sept. 30, suggested that the Dominion Government guarantee a bond issue for the greater part of the amount.

The company proposes, according to press reports, to rebuild at once the burned station at Eganville, Ont.; to rebuild portions of its wharves at Owen Sound, Ont., and to extend a spur line in Norwich tp., Ont., to a condensed milk factory located on lot 10, con. 1 of the township. (Oct., pg. 392).

**Intercolonial Ry.**—A press report states that the Intercolonial and the National Transcontinental tracks are being consolidated for about 10 miles west from Moncton, N.B. The two lines parallel each other for this mileage, and in order that there may be only one track to keep in repair, the Intercolonial track is, it is said, being taken up.

**Intercolonial Ry.**—A press report states that engineers are making surveys at Painsec, N.B., through Baie Verte, Tignish, Pugwash and on to Truro, N.S., for a revised location for portions of the line. The report adds that the surveys between Truro and the Nova Scotia-New Brunswick bound-

ary are practically completed, and that the work in New Brunswick will be finished in December. (Oct., pg. 392).

**Kettle Valley Lines.**—Tracklaying is reported to have reached to eight miles beyond Ladner Creek, having been carried over the creek on a temporary structure. It is expected to connect up with the rest of the line at Coquihalla summit Nov. 30. Satisfactory progress is reported to have been made with the building of the permanent steel bridge over Ladner Creek. (Oct., pg. 392).

**National Transcontinental Ry.**—F.P. Gutelius, General Manager, Canadian Government Railways, is reported to have said, Oct. 6, that the entire line is in splendid shape, both physically and as regards rolling stock.

A press report states that preparations are being made at Neelands, 30 miles west of Cochrane, Ont., for the erection of a large pulpmill, and that it will require the building of about three miles of line to give the mill connection with the N.T.R. (May, pg. 183.)

### Canadian Pacific Railway Construction, Betterments, Etc.

**Eastern Division.**—The Board of Railway Commissioners has authorized the company to build an industrial spur for the Hull Iron and Steel Foundries Co., Hull, Que.

At a sitting of the Board of Railway Commissioners at Belleville, Ont., recently, application was made for an order to elevate the tracks within the city to allow of the construction of subways, and for the building of an interswitching track with the Canadian Northern Ontario Ry.

**Ontario Division.**—A press report states that a contract has been let to the Foundation Co., Montreal, for the construction of a bridge at Darling, Ont., on the Toronto-Sudbury line, 114.8 miles from Toronto, at a cost of about \$50,000.

**Manitoba Division.**—A press report states that the company is about to build an industrial spur to the Western Terminal Elevator Co.'s site, Fort William, Ont.

**Alberta Division.**—It is reported that the C.P.R. is planning to spend about \$7,000 in making improvements in the sanitary conditions at the Alberta stockyards in East Calgary.

The City of Calgary is reported to have reached an agreement with the company under which the cost of the erection of any subway ordered to be built under the company's tracks to the Dominion Government grain elevator at Calgary, should be divided between the city and the company.

**British Columbia Division.**—The company is reported to have transferred its waterfront property at Arrowhead, B.C., to the Dominion Government for wharf construction purposes. (Oct., pg. 393.)

### Progress of Quebec Bridge Construction.

The north anchor arm of the bridge across the St. Lawrence River at Quebec, being built by the Dominion Government, was completed last year and the north cantilever arm and the south anchor arm are under construction. It is expected that by the end of the year the erection of these two arms will be completed. It is also expected that, during 1916, the south cantilever arm will be erected, and the suspended arm will be put together at a site about three miles below the bridge. This member of the bridge will be erected on pontoons and floated into position, and it is hoped to complete this work also next year. The steel work is being manufactured and erected by the St. Lawrence Bridge Works.



### Traffic Orders by the Board of Railway Commissioners.

#### Kettle Valley Railway Sleeping and Parlor Car Fares.

24225. Sept. 28. Re application of the Kettle Valley Ry. for approval of its Standard Passenger Tariff, C.R.C. no. S-2, covering sleeping and parlor car tolls: It is ordered that the said tariff be approved.

#### Preparing Canadian Northern Passenger Tariffs.

24227. Sept. 27. Re application of Canadian Northern Ry. for approval of bylaw authorizing R.L.Fairbairn, General Passenger Agent, to prepare and issue tariffs in respect of tolls upon passenger traffic to be charged by the company for all passenger traffic that may be carried upon its railway, or any part of the Canadian Northern Ry. system, excepting to and from points west of Port Arthur or West Fort upon its railway, or any part of its railway system, and to specify to whom, the place where, and the manner in which such tolls shall be paid: It is ordered that the said bylaw be approved.

#### London, Ont., Express Rates.

24236. Re complaint of the London, Ont., Board of Trade, against the alleged discrimination shown in favor of Toronto in express charges from that city as compared with those charged from London: Upon hearing the complaint in London, July 15, 1915, the London Board of Trade being represented at the hearing, and what was alleged; and upon reading the submissions filed—it is ordered that the complaint be dismissed.

#### Carload Rates on Salted Meats.

24241. Sept. 27. Re complaint of Canadian Manufacturers Association that the railway companies insist on charging 4th class rates on salted meats, in carloads, instead of 5th class, as provided in Canadian Freight Classification item 54, page 113. Upon hearing the complaint at Ottawa, Sept. 21, in the presence of representatives of the Canadian Manufacturers Association, the Canadian Freight Association, the Canadian Pacific, Grand Trunk, and Canadian Northern Railway Companies, and the Pere Marquette Railroad Company, and what was alleged: It is ordered that the complaint be dismissed.

#### Dried Fruit Rates From San Francisco to Fort William.

24242. Sept. 30. Re application of D. G. Mathias for a rate of \$1.10 on dried fruit from San Francisco, Cal., to Fort William, Ont., upon hearing the application at Fort William, June 14, the Canadian Pacific, Canadian Northern, and Grand Trunk Pacific Railway Companies being represented, the applicant appearing in person, and what was alleged; and upon reading what has been submitted by the railway companies mentioned it is ordered that the application be refused.

#### Canadian Northern Passenger Rates in Alberta and British Columbia.

24254. Oct. 2. Re application of Canadian Northern Ry., under sec. 331 of the Railway Act, for approval of its Standard Passenger Tariff, C. R. C. no. W-1283, covering a rate of 4c. a mile over the Mountain Division and 3c. a mile east thereof: Upon the report and recommendation of the Chief Traffic Officer it is ordered that said tariff, showing a rate of 3c. a mile, Edmonton, Alta., to and including Tollerton, Alta., and 4c. a mile west of Tollerton, to and including Vancouver, B. C., be approved.

#### Diverting Cars to Fort William Elevators.

24277. Oct. 5. Re complaint of B. J. Ostrander & Co., of Winnipeg, that the railway companies refuse to divert cars con-

taining grain from one lake front elevator to another after the cars have reached the yards at the lake front: Upon hearing the complaint at Fort William, Ont., June 14, the complainant and the Canadian Pacific, Canadian Northern, and Grand Trunk Pacific Railway Companies being represented, it is ordered that the complaint be dismissed.

#### Rates on Apples, etc., to Halifax for Export.

24313. Oct. 16. Re complaint of United Fruit Growers, Nova Scotia Fruit Growers, and King's County Board of Trade against the advanced rates on apples and potatoes to Halifax for export, as published in Dominion Atlantic Ry. tariffs, C.R.C. no. 454 and C.R.C. no. 455, respectively, to become effective Oct. 25. It is ordered that the said advanced rates be suspended, pending a hearing by the Board.

#### Canadian Northern Flag Stations.

General order 150, Oct. 19, re application of Canadian Northern Ry. for an order amending General Order 54, Jan. 6, 1910, requiring construction of flag stations in Manitoba, Saskatchewan, and Alberta, from or to which l.c.l. freight and passenger traffic is carried: Upon reading what is filed in support of the application, and its appearing that the wording of the order does not clearly carry out its intention, it is ordered that the said order be amended by striking out the words "All freight traffic" in the first line of clause 3, and substituting therefor the words, "All l.c.l. freight traffic."

### Quebec Central Railway Company's Annual Report and Meeting.

The report for the year ended June 30 presented at the annual meeting in Montreal, Oct. 20, over the signature of David McNicoll, President, states that the company's property is leased to the Canadian Pacific Ry. Co. for 999 years, from Jan. 1, 1913. Interest on the ordinary stock at 4% per annum for four years from July 1, 1912, and 5% per annum in perpetuity thereafter, and interest and principal on the 4% first mortgage debenture stock, 3½% second mortgage debenture stock, and 5% third mortgage bonds, is guaranteed.

#### REVENUE ACCOUNT.

Freight revenue .....	\$903,397.77
Passenger revenue .....	354,407.26
Mails .....	31,106.59
Express, miscellaneous, etc. ....	56,817.52
	<b>\$1,345,729.14</b>

Maintenance of way and structures. ....	\$181,026.44
Maintenance of equipment .....	136,365.30
Traffic expenses .....	27,340.92
Transportation expenses .....	506,947.90
General expenses .....	49,022.80
Taxes .....	19,180.13
Expenses outside operations .....	8,363.86

Total operating expenses .....	\$928,247.35
Balance carried to Net Revenue Account .....	417,481.79
	<b>\$1,345,729.14</b>

#### NET REVENUE ACCOUNT.

Balance brought forward from June 30, 1914 .....	\$ 75,770.82
Balance from revenue account .....	417,481.79
Other income .....	8,615.89
	<b>\$501,868.50</b>

Interest on 4% debenture stock 12 months .....	117,741.60
Interest on 3½% debenture stock 12 months .....	57,572.66
Interest on 5% third mortgage bonds 12 months .....	82,246.66
Dividend on share capital stock (4%) .....	135,264.12
Balance .....	109,043.46
	<b>\$501,868.50</b>

Out of the net revenue balance of \$109,043.46 an appropriation of \$25,000 was made to additional equipment and betterments and improvements to property, leaving \$84,043.46 carried forward.

The directors for the current year are:—

George Bury, President; I.G.Ogden, Vice President; J.H.Walsh, General Manager; E.W.Beatty, K.C., Montreal; C.D.Brassey, and Thos.Lindley, London, Eng. L.A.Carrier represents the Quebec Government.

### Among the Express Companies.

Dominion Ex. Co.'s employees on the Pacific Division have contributed \$1,000 for the purchase of a machine gun for use as the Minister of Militia may direct.

The Prince Edward Island act to amend the acts regarding the imposition of taxes on companies in the Province, passed at the last session of the Legislature, provides that there shall be levied on every express company doing business within the Province, and not having its principal office or organization therein, a tax of \$150.

Stephen Tingley, who died at Vancouver, B.C., Oct. 9, aged 76, was, in his early days, closely associated with Barnard's Express, running between Yale and Cariboo, and was actively engaged in the business from 1864 to 1897. Barnard's Express was the forerunner of the British Columbia Ex.Co.

A first distribution of the accumulated proceeds of the liquidation of the United States Ex.Co., will be made to stockholders during November. D.I.Roberts, formerly General Manager, Quebec, Montreal and Southern Ry. and Napierville Jct.Ry., Montreal, as liquidator of the U.S.Ex.Co., has disposed of the various operating contracts, express equipment, etc., but has not yet cleared up the bonds and stocks of other companies. These represent a par value of \$5,076,800, and consist of stock in nine railway companies, bonds in some 200 other companies, and some mortgages.

A press report from Ottawa states that the question of express delivery and collection limits in cities and towns will come before the Board of Railway Commissioners shortly, to be dealt with in a general way. Applications have been made to the Board from time to time for certain extensions of these limits in various cities and towns, and each application has been dealt with on its merits. The report indicates that it is proposed to hear both sides of the matter, and if possible adopt some general plans to be applied to cities and towns as a whole, with the view of avoiding numerous individual applications for extensions without reasonable grounds.

The Canadian Ex. Co.'s operating statistics for May, and for 11 months ended May 31, compared with those for similar periods in 1914 are as follows:

	May 1915.	May 1914.
Mileage of all lines covered....	8,876.50	7,080.31
Charges for transportation....	\$273,231	\$271,973
Express privileges, Dr. ....	127,623	126,930
Operations other than transportation .....	5,125	10,802
Total operating revenue .....	150,733	155,846
Operating expenses .....	127,533	130,933
Net operating revenue .....	23,199	24,913
Uncollectible revenue from transportation .....	6	
Express taxes .....	4,000	3,000
Operating income .....	19,193	21,913
	11 months to May 31 1915.	11 months to May 31 1914.
Charges for transportation .....	\$2,844,241	\$2,910,153
Express privileges, Dr. ....	1,417,936	1,380,318
Operation other than transportation .....	55,119	102,864
Total operating revenue ....	1,481,244	1,632,699
Operating expenses .....	1,411,289	1,530,443
Net operating revenue .....	70,135	102,256
Uncollectible revenue from transportation .....	95	
Express taxes .....	44,000	31,700
Operating income .....	26,040	70,556

The Marquis and Marchioness of Aberdeen and Temair had a Canadian Pacific private car placed at their disposal for their trip from Toronto to San Francisco.



# Electric Railway Department

## Petrol Hydraulic Motor Car for Lacombe and Blindman Valley Railway.

A car of a type that is novel in this country has been delivered to the Lacombe and Blindman Valley Ry., which is under construction from Lacombe to Rimby, Alberta. The car embodies the feature of a semi-direct drive, that has the advantage of flexibility. It is typically English in design, weighs 20 tons, is 33 ft. long overall, and 8¼ ft. wide overall. The truck centres are 18 ft., and the wheel base of the truck wheels 5½ ft. The seating capacity is 36, provided in rattan covered cross seats, with a central aisle.

The power transmission is on the Hele-Shaw system, wherein a variable stroke oil pump, directly driven by an engine, forces oil through pipes to an oil motor, which in turn, drives the axles of the car. The power of the driving engine is thus converted into movement of oil under pressure, and as the quantity of oil pumped is variable through the variable stroke pump, the speed of the oil motor, which is directly dependent on the quantity of oil delivered to it, can be directly regulated. By a suitable movement

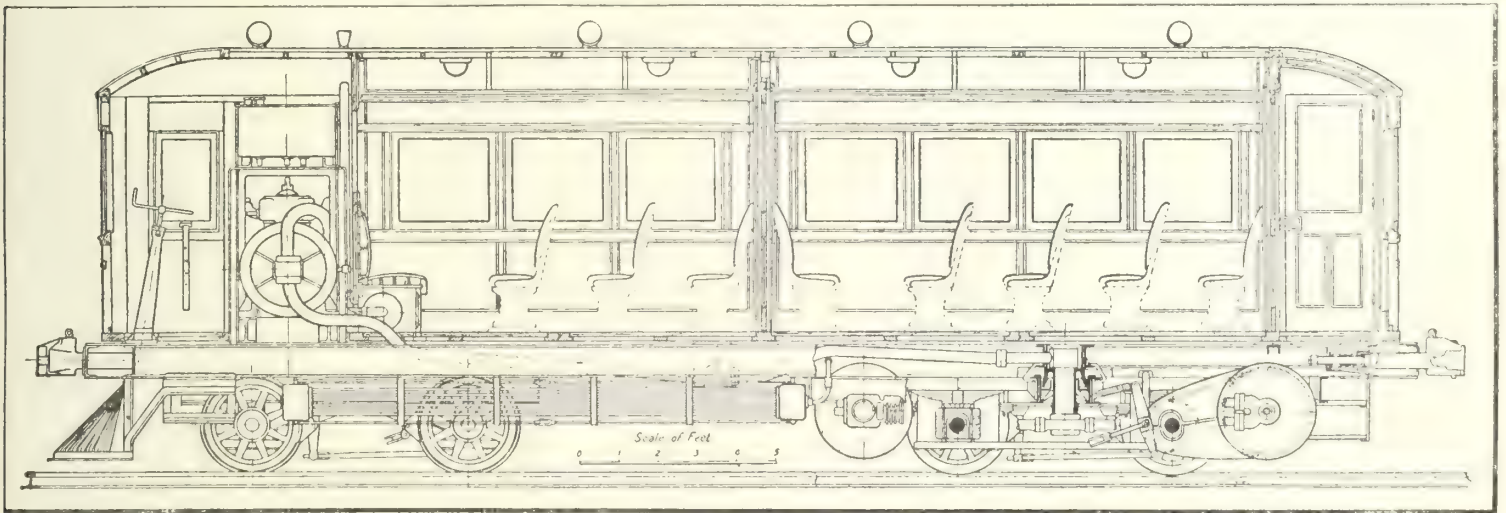
in which the plungers reciprocate. Inside the fixed casing, there is a guide frame, which is normally and when the pump is running idle, concentric with the outer casing and cylinder body. In this guide frame is cut a circular guide channel, and the plungers are connected to this by slipper blocks. As soon as the guide frame is moved in either direction so that its centre becomes eccentric to the outer casing, the plungers are caused to reciprocate in the cylinders, the amount of stroke varying with the amount of eccentricity. Oil is drawn in and discharged through the hollow central shaft, around which the plungers rotate. The special feature of the pump is that its capacity and direction in which it forces the oil can be varied at will by simply altering the position of the guide frame.

The oil under a pressure of upwards of 2,000 lbs. per sq. in., is transmitted from the central shaft of the pump, through a heavy steel pipe, to the two hydraulic motors on the rear truck. The oil is delivered from the transmission pipe to the piping of the

and Co., London, Eng., with whom an order has also been placed for a locomotive operating on the same system.

## The Canadian Autobus Company's Franchise in Montreal.

The Supreme Court of Canada gave judgment at Ottawa, Oct. 12, dismissing the petition of D. Robertson, Montreal, who sought the reversal of two judgments of the Quebec courts, holding that the City of Montreal had acted legally when it passed bylaw 483 on June 10, 1912, granting a 10-year franchise to the Canadian Autobus Co. The original action was tried in Sept., 1912, before Justice Demers, who held that the City Council was acting within its powers when it passed the bylaw, which Mr. Robertson desired to have declared ultra vires. This view was upheld in the Quebec Court of Appeal. The bylaw granted the Canadian Autobus Co. an exclusive franchise for the operation of motor bus traffic in Montreal for ten years. In addition to the question of the bylaw itself, there was also involved in the case the question whether an individual ratepayer had the right to bring such an action, without the



Petrol-Hydraulic Motor Car for Lacombe and Blindman Valley Railway, showing Interior Arrangement and Transmission.

of the control spindle, the direction of flow of the oil, and therefore the direction of motion of the motor, may be reversed at will. It will thus be seen that the oil motor rotates at a speed directly proportional to the amount of oil it receives, its speed being varied and reversed at will. Likewise, when the pump is at full stroke, it is delivering a large amount of oil at moderate pressure, but when the stroke is reduced, the same power in the motor delivering a smaller amount of oil, will deliver it at a higher pressure, giving a greater effort at the motor, or a high initial starting torque.

The motor driving the pumps is a 6 cylinder engine, with cylinders 140 by 156 mm., designed to give 103 b.h.p. at 1,150 r.p.m. on gasoline and 85 b.h.p. on oil. This engine is situated across a front compartment of the car, and is operated from that end only, by the operator, who is situated directly in front of the engine. Directly connected to the engine shaft, is the variable stroke pump mentioned. In it, oil is the working fluid. This pump has a fixed outer cylindrical casing, and an internal rotating part carrying the radial cylinders

rear truck through an arrangement of packed valve in the centre pin connection of the truck to the underframe. The motors are situated front and rear of the truck, and connect with the truck axles through heavy chain gearing.

As the hydraulic fluid used is ordinary lubricating oil, the claim is made that all the working parts are thus perfectly lubricated, reducing wear to a minimum. There are no piston rings, packing or parts, requiring renewal, and any oil that may leak past the plungers of the pump or motors, is returned to the system by means of a small auxiliary pump. Safety valves are fitted on the pipe system, so that if any undue stress is thrown on the gear, the pressure is relieved automatically, and the risk of breakage obviated. There is also a by-pass for the oil, actuated automatically by means of an air cylinder when the air brakes are applied, thus preventing damage to the hydraulic motors. The engine is controlled automatically by the operation of the hand wheel, which actuates the pump, effecting the opening and closing of the pump throttle.

This car was supplied by McEwan, Pratt

intervention of the Attorney General or some other official. The majority of the Supreme Court judges concurred in dismissing the petition, with costs, Justices Idington and Anglin dissenting.

There is another somewhat similar case concerning the same bylaw pending in the Quebec courts, in which a ratepayer named Shepherd is plaintiff.

**Radial Railways and Their Entrance Into Toronto.**—A commission of three engineers appointed respectively by the Toronto City Council, the Toronto Harbor Commission and the Hydro Electric Power Commission of Ontario, to consider and report upon the radial railway system as far as it relates to entrances into Toronto, has completed its investigations, and it is said that its report will be submitted early in November. The commissioners are R. C. Harris, Works Commissioner, representing the City Council; E. L. Cousins, representing the Harbor Commission, and F. A. Gaby, representing the Hydro Electric Power Commission of Ontario. The expenses are stated to have been about \$30,000.



## Quebec Railway Light, Heat and Power Company's Annual Report.

The figures given in Canadian Railway and Marine World's last issue as for the year ended June 30 were taken from a press report. The annual report has since been distributed and the following particulars are taken from it:

The gross earnings from operation for the year were \$1,118,096.35 compared with \$1,122,144 in 1914. Adding miscellaneous income \$235,977.97, makes a total revenue from all sources of \$1,784,074.32. The operating and maintenance expenses were \$924,817.22, against \$913,101.60. The fixed charges and taxes of all kinds were \$79,182.05, leaving a net surplus of \$119,775.05, which, added to that of last year, leaves a total surplus to date of \$347,499.45. The properties and plants have been maintained in the same high state of efficiency as heretofore, as evidence of

## The Jitney Situation in Canada.

The jitney in Canada came and flourished extensively for some months, but except in one or two cities it has practically disappeared in the east, and even in those cities where it continues it is reported that the number of vehicles in use has considerably diminished. In North Toronto, which was a happy hunting ground for the jitney driver, it was reported, Oct. 18, that there were only about half the number in operation that there were three months ago. The putting in force consistently of the regulations made by the municipalities has had a considerable effect in reducing the number of jitney men, and the Hamilton authorities announced, Oct. 14, that any driver convicted of a violation of any of the provisions of the bylaws will have his license cancelled.

In the west, however, particularly in the Pacific Coast cities, the jitney men are reported to be holding their own pretty well.

penalty of not less than \$10 or more than \$100.

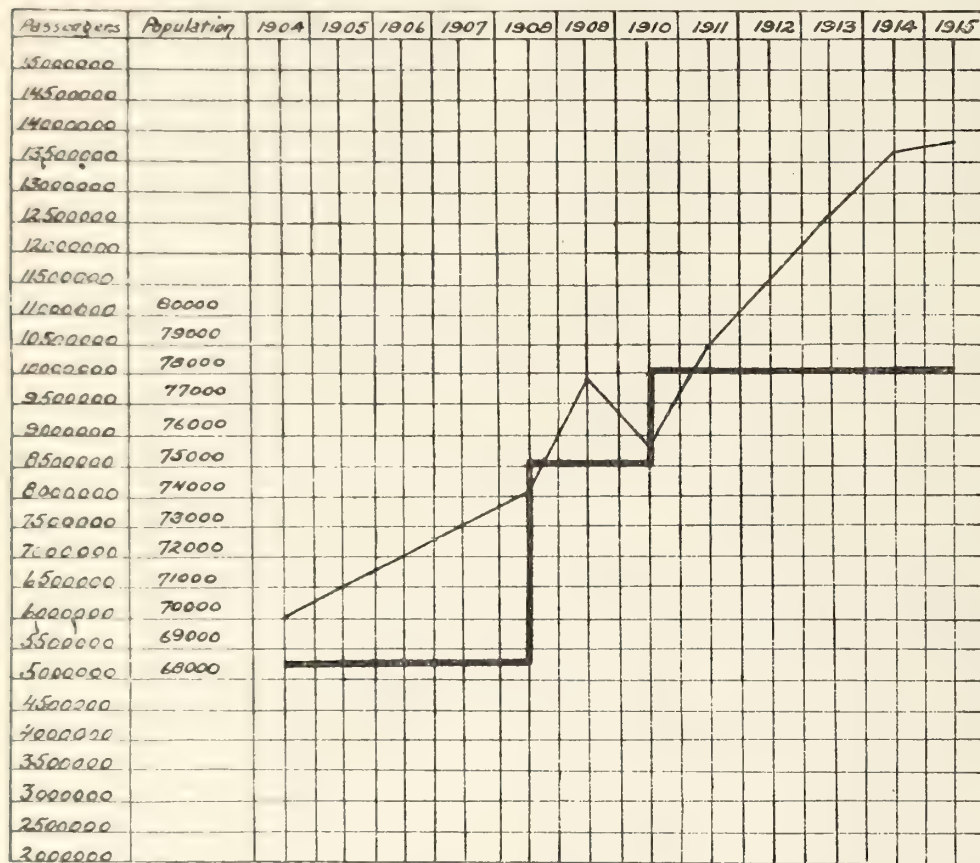
## The Toronto Railway Extension on North Yonge Street.

The Ontario Court of Appeal on Oct. 6, announced the reasons for dismissing the appeal of the City of Toronto against the Ontario Railway and Municipal Board's order directing the Toronto Ry. to extend its tracks on Yonge St. from its present terminus, northerly to Farnham Avenue, information respecting which has been given in previous issues. The Court holds that it is bound by a decision of a similar case which occurred on the expiry of the Toronto and York Radial Ry.'s franchise for its Mimico line on Queen St. west of Dufferin St., when Chief Justice Moss decided that the Toronto Ry. was entitled to operate over the portion of the line within the city limits of 1891, on the expiry of the old franchise granted by another municipality before the street in question was taken into the city. At the time of the Toronto Ry.'s agreement with the city in 1891, Queen St., west of Dufferin St., and Yonge St., north of the C.P.R. tracks, although within the city limits, were covered by lines operated under franchises to other lines than the Toronto Ry., and the portions of these streets so covered were excepted from the city streets over which running rights were given to the Toronto Ry. It was urged on behalf of the city that there was a distinction between the two cases, but the court could not maintain this.

The city has decided to appeal the case to the Judicial Committee of the Privy Council in England. In the meantime, in pursuance of the Ontario Railway and Municipal Board's order, the Toronto Ry. has complied with the necessary formalities before it can proceed to lay the track, and is only awaiting the approval of the plans by the City Engineer.

The Edmonton Municipal Railway has been placed under A. G. Harrison, one of the city commissioners, and J. H. Moir has been appointed Traffic Manager. Commissioner Harrison advises us that he has given Mr. Moir the full powers of a superintendent in order that there may be no misunderstanding with the men as to his authority in certain matters. Questions of general policy are, however, referred to a committee of the City Council in conjunction with the city commissioners as an advisory board in connection with municipal railway matters. We were further officially advised that a schedule was put into effect recently, utilizing the belt lines and giving a better service at about the same expenditure. The results are stated to show an improvement in receipts and an increase of 2,000 passengers per day. A proposition to the City Council to abandon the straight five cent fare and to restore the old rate of 6 tickets for 25c is, we are advised, being held in abeyance, as from the experience of other electric railways it does not appear that the increased revenue derived from a reduction in fares justifies such reduction.

**The Ontario West Shore Ry. Fiasco.**—Goderich, Ont., press dispatch, Oct. 15:—At a meeting today at Kintail of representatives of municipalities affected by the defunct Ontario West Shore Electric Railroad, it was decided to institute legal proceedings against the Toronto General Trusts Co. to recover \$218,000, which was shown to have been paid to J. W. Moyes, promoter of the road, the amount being, it is claimed, more than the progress certificates called for.



Quebec Railway, Light and Power Co.'s City Division.

The light line shows the passengers, including transfers; the heavy line shows the population.

which there was expended during the year on maintenance account, \$193,896.78.

Diagrams attached to the report show that the carloads of freight hauled on the Montmorency Division increased from between 2,000 and 2,500 in 1903-4 to nearly 8,500 in 1914-15. The passengers carried on the same division increased from between 800,000 and 900,000 in 1903-4 to between 1,700,000 and 1,800,000 in 1914-15. The passengers carried on the city division increased from 6,000,000 in 1903-4 to between 13,500,000 and 14,000,000 in 1914-15.

The accompanying diagram shows the passenger traffic on the city division for a term of years.

**Canadian Railway Club.**—E.S.M. Macnab, Engineer of Electric Car Lighting, C.P.R., read a paper on electric lighting of railway cars, at the Club's monthly meeting in Montreal, Oct. 12.

The New Westminster, B.C., bylaw makes the Chief of Police the chief examiner for the granting of licenses, and authorizes him to call in any dealer in automobiles to give advice on technical matters. In Victoria a bylaw regulating the traffic was adopted, but it has not been put in force as this is written, the Board of Examiners of cars and drivers not having been appointed.

New regulations of various kinds are being adopted in U.S. cities to further regulate the traffic. In San Diego, Cal., it has been found necessary to require jitneys to maintain the same terminals that street cars maintain, and to operate for 18 hours a day. The State of Wisconsin has passed a general law requiring that motor vehicles being operated for hire must furnish a reasonable and adequate service at just rates; must be labelled "common carrier," and that a bond must be provided, under a



## Electric Railway Projects, Construction, Betterments, Etc.

**British Columbia Electric Ry.**—F.R. Glover, General Executive Assistant, had a conference with the Mayor of New Westminster recently in connection with the laying of permanent tracks on Columbia St West, and on Sixth St. The city is pressing for the work to be done, but the company's present policy is against undertaking any new work. (Oct., pg. 404.)

**Hydro Electric Power Commission of Ontario.**—In reference to the statement made at the Ontario Municipal Association's annual meeting in Toronto, Sept. 2, by Chief Engineer Gaby, of the Commission, to the effect that reports would be ready shortly thereafter for presentation to the various municipalities interested, showing the estimated cost of the network of electric railways through the western portion of the Province, we are officially advised that it is the intention to have delegates from the various municipalities interested in these proposed lines assemble by districts in Toronto for the purpose of discussing the routes and estimates that have been prepared. The final lines on which the ratepayers will be asked to vote have not yet been fixed and until this has been done it is not likely that reports will be available for general distribution. However, it will be necessary to prepare descriptions of routes and give figures showing the assessment against each municipality for the various lines before the project can be voted upon. (Oct., pg. 404.)

**Hydro-Electric Power Commission of Ontario.**—In connection with the plans prepared by the commission for the building of a system of electric railways under municipal control, the municipalities interested were, on Sept. 29, requested to appoint representatives to meet the commission to discuss the matter. Chief Engineer Gaby advises that nothing as to the plans of the projected railways, or their probable cost, can be made public until after the representatives of the municipalities interested have considered them.

T.J. Hannigan, Secretary of the Ontario Hydro-Electric Railway Association of Ontario, is reported to have stated, Oct. 19, that the municipalities through which hydro-electric lines are surveyed will be called upon to approve of the routes, plans, etc., at the civic elections in January, and that the amount of passenger traffic, estimated on three miles from each side of the road, would be submitted, together with the freight prospects, etc., would be submitted at a series of group conferences which were to be held in Toronto commencing about Oct. 27, invitations to which were sent out some time ago. The western part of the Province has been grouped as follows for this purpose:

The municipalities from Toronto to Guelph; Guelph and Berlin to Stratford; Stratford to St. Marys and London; London to Sarnia via Arkona and Petrolia; Toronto to Collingwood; Niagara District, as far as Hamilton; Hamilton to Guelph and north to the Georgian Bay.

**London and Port Stanley Ry.**—The London Railway Commission decided, Sept. 28, to proceed immediately with the erection of car barns on the west side of the line south of Philip St., London, Ont.

We are officially advised that the erection of a car barn on the west side of the line south of Phillips St., London, is being proceeded with. Hyman and Son have the contract for \$27,000.

**Montreal and Southern Counties Ry.**—We are officially advised that satisfactory progress is being made with the construction of

the extension of the line from St. Cesaire to Granby, Que., 15 miles. A passenger station is being built at Abbotsford. Orders have been placed with the Canadian Westinghouse Co., and with the Northern Electric Co., for substation equipment. W.B. Powell, Montreal, is General Manager. (Sept., pg. 359.)

**Montreal Tramways Co.**—The Outremont, Que., City Council on Sept. 30 called upon the company to lay tracks from Mount Royal Ave., along St. Jean Baptiste, Rockland and Maplewood avenues in the spring of 1916. (Oct., pg. 404.)

**Oshawa Ry.**—We are officially advised that the company has under construction about half a mile of pavement betterment on Simcoe St., just north of Oshawa Junction, Ont. D.A. Valteau, Oshawa, Ont., is Superintendent. (Aug., pg. 318.)

**Peterborough Radial Ry.**—We are officially advised that the company is reconstructing the track on Charlotte, Park and George Streets, as permanent routes. W.G. Ferguson is Local Manager. (Oct., pg. 414.)

**Sherbrooke Ry., Light and Power Co.**—We are officially advised that the company is contemplating the building of a substation for power at Waterville, Que. J.H. Trimmingham is Superintendent. (April, 1913, pg. 186.)

**Toronto Civic Railway.**—We are officially advised that the city is replacing the temporary track on Bloor St., Dundas St. to Quebec Ave., 0.746 of a mile, double track, with a permanent paved track construction. It is proposed to lay track on Lansdowne Ave., from St. Clair Avenue to the C.P.R., in the near future. D.W. Harvey, Toronto, is Superintendent. (Aug., pg. 359.)

**Toronto Suburban Ry.**—Track has been laid on the extension from Lambton to Guelph, Ont., 46 miles, over the Humber River bridge, to the junction with the present line on Dundas St. at Lambton Park, and ballasting and other finishing up operations are in progress. Small gangs of men only are being employed. Work is in progress upon the substations at Georgetown and Guelph, and at the car barn at Lambton Park. It is expected to let contracts for the catenary line equipment in the near future. G.C. Royce, West Toronto, is General Manager.

The construction of the new car barn at Lambton is in the hands of the Suburban Construction Co. The material details for the catenary line are not yet settled, but it will probably be a steel messenger wire suspending a 4% copper trolley wire, American standard grooved.

**Sandwich, Windsor and Amherstburg Ry.**—The ratepayers of Walkerville, Ont., refused by a majority of nearly three to one, on Oct. 16, to grant an extension of the franchise of the Windsor and Tecumseh Electric Ry. a subsidiary of the S. W. and A. Ry., in return for the construction of a belt line to serve the factory and residential districts. The Town Council desired to have the mile and a half belt line built to suit local requirements, and asked the company under what conditions it would undertake to build it. The company offered to do the work if its franchise, which will expire in 1922, was extended until 1934. The company was not anxious to build the line, and there was no special effort made to have the bylaw carried. The deciding factor in the voting was the proposal under consideration by the Hydro Electric Power Commission of Ontario for building an extensive system of municipally owned lines.

Sir Adam Beck, Chairman of the Commission, addressed a public meeting upon the question, Oct. 15. (Oct., pg. 404.)

**Winnipeg Electric Ry.**—We are officially advised that the company is laying 750 ft. of double track line, on concrete base, on Webb St., Winnipeg, Man. Wilford Phillips is Manager. (July, pg. 277.)

## Flange Bearing Special Work on Montreal Tramway Co.'s Lines.

By W. F. Graves, Chief Engineer, Montreal Tramways Co.

Some years ago it was our practice to design the throatways of our frogs and crossings with a depth that was equivalent to normal depth of the flange, so that flange and tread wear were simultaneous. During the past two years we have experimented with the solid manganese work of a local manufacturer in decreasing the depth of throatway in the frogs and crossings by 1-16 in., on two different occasions making the total decrease on the last special work which we had  $\frac{1}{8}$  in. This permitted flange bearing across the intersecting gauge lines, the ramp in the floor being 18 in. long. This intersection was installed about a year ago and was built of solid manganese, and the tread wear has not shown on the head of the rail. This company uses entirely chilled cast iron wheels. There has been no undue chipping of wheel flanges that I can ascertain that is directly due to the shallow throatway. On a layout of hard centre work, where the ramp of the floor was short, we have built up the throatway in the adjacent rolled rail by means of an electric weld. This has worked out very well, but unfortunately, owing to the manner in which it is built up, it does not last very long. We have also tried this on drawbridge ends where grooved rail has been laid both on the bridge and on the abutment. This lasted about nine months before becoming tread ridden and tended to preserve the ends of the rails.

I question the policy of building up throatways in solid manganese or hard centre special work for the purpose of raising the floor, except where the steel work at the intersection of the gauge lines has signally failed, as the application of the intense heat necessary to make the addition to the throatway tends, without a doubt, to damage the manganese steel at a very vital point.

My judgment is that a flange bearing throatway is desirable. To what extent the throatway should be built up, I am not prepared to say, as on one of the suburban lines on which we handle freight cars with M.C.B. wheels, we installed a frog with a throatway  $\frac{1}{2}$  in. in depth. We were handling gondola class of cars of 100,000 lb. capacity, which belonged to a very large industry on this line, and after several months of service over this frog, the industry complained about the chipping of its flanges, and an examination by the division roadmaster and the superintendent of track indicated that this frog was the cause, although the ramp was very easy. The wheels on the gondola were all chilled iron. This would seem to indicate that there is a limit to which the throatway can be raised. I think this subject is worth a great deal of attention from electric railway track men.—Electric Railway Journal.

**Edmonton Radial Ry.**—We are officially advised that there is under way the reconstruction of 0.25 mile of permanent track on Jasper Ave., and the construction of 0.75 mile of track on Portage Ave. from Norwood Boulevard to 111th St. J. H. Moir is Superintendent. (Oct., pg. 404.)



## Mainly About Electric Railway People.

**W.H.Stapleton** is acting as Superintendent, Niagara, Welland and Lake Erie Ry., Welland, Ont., during the illness of the Superintendent, **F.J.Boyd**.

**George L.Guy** has been appointed Engineer of the Manitoba Public Utilities Commission, and will deal with matters pertaining to electric railways in the Province, as well as performing other duties.

**R.F.Hayward**, General Manager Western Canada Power Co., read a paper before the Canadian Society of Civil Engineers, at Montreal, Oct. 8, on the company's Stave Falls power development.

**Hon. David MacKeen**, who has been appointed Lieutenant-Governor of Nova Scotia, was for some years connected with the Caledonia Coal and Ry.Co., and is a director of the Halifax Electric Tramway Co.

**Lt.-Col.D.R.Street**, Secretary - Treasurer, Ottawa Light, Heat & Power Co. Ltd. and Moose Jaw Electric Ry., is in command of the 77th Battalion, Canadian Expeditionary Forces, which is training at Rockcliffe Camp, Ottawa.

**Patrick Dubee**, Secretary-Treasurer, Montreal Tramways Co., was reported, Oct. 16, to have practically recovered from the effects of injuries to his head and right leg, due to a fall from a street car at the beginning of the month.

The Ottawa Electric Ry. is represented in the Canadian Overseas Expeditionary Forces by one of its directors, **T.F.Ahearn**, by a clerk and an electrician, 17 conductors, and two motormen. The electrician, **F.G. Blewden**, was killed in action.

**Col.H.H.McLean**, K.C., M.P., for Queen's-Sunbury, N.B., and President of the St.John Ry., who has been in command of a brigade at Valcartier, Que., for the past few weeks was, according to a press dispatch, in Ottawa recently interviewing the Minister of Militia and asking that he be given a chance to get to the firing line. The dispatch adds that Col.McLean has done excellent work at Valcartier, and has high hopes of obtaining a command at the front.

In addition to the changes in the Chatham, Wallaceburg & Lake Erie Ry.'s organization mentioned in Canadian Railway and Marine World for October, **L.C.Fritch**, General Manager, Eastern Lines, Canadian Northern Ry., has been appointed General Manager in addition to his other duties. **L.W.Mitchell**, Toronto, Treasurer and Purchasing Agent, Canadian Northern Ry., and also heretofore Treasurer, C.W. & L.E.R. has also been appointed Purchasing Agent for the latter line.

**Capt.S.A.Dion**, younger son of A.A.Dion, President Moose Jaw Electric Ry., and brother of A. H. Dion, Superintendent of that company, joined the 23rd Regiment in Montreal, but while training at Shorncliffe was drafted into the 3rd Battalion and went to France where he was for some months. He was wounded in a charge at Festubert, May 24, by machine gun bullets, was in a hospital in England for three months and then started for home on the s.s.Hesperian, which was torpedoed. He lost everything he had with him, except the clothes he wore, and returned to London for a few days, then sailing on the s.s.Corsican, and reached home safely. His left arm is useless and probably will be for some months, but it is hoped he will ultimately regain the use of it. He has several months leave of absence.

**William Henry Nix**, who died at the Wellesley Hospital, Toronto, after a short illness, Oct. 14, was born in London, England, in 1840. He came to Canada about 30 years ago, prior to which he had spent some time

in a law office in England, where he acquired a knowledge of certain points of law, which was of considerable service to him during the last few years. He entered the old Toronto St. Ry. Co.'s service May 8, 1886, at the time of a strike of employees, as a driver of a one-horse car, and two years later was promoted to be timekeeper in charge of the one-horse cars, and remained in that position until the system was taken over by the City, about March, 1891. During the short time the railway was operated by the City, between March and September, 1891, the organization remained practically as it was. On Sept. 1, 1891, when the present company obtained possession, the old title of timekeeper was done away with, and on the electrification of the lines, he was appointed roadmaster, and eventually head-roadmaster, of all lines, which position he retained until his death. Latterly he was in charge of the disciplining of the employees, and was official examiner of conductors and motormen, and from 1894 to 1896 he acted as secretary of the company's claims committee. For some years past, in addition to his ordinary duties, he has looked after the company's claims against persons and firms in respect of damage to its cars and other property, and also of the enforcing of its bylaws against offending passengers, etc. He was well known amongst electric railway men throughout Canada, and some years ago was a regular attendant at electric railway meetings.

**Manitoba Public Utilities Commission.**—**H.A.Robson**, Commissioner of Public Utilities for Manitoba, whose resignation was foreshadowed in Canadian Railway and Marine World for October, has assumed his new position as General Counsel, Union Bank of Canada. We were advised Oct. 22, that no successor had then been appointed, but that the Commission's work was proceeding as heretofore, and that in the meantime Mr.Robson was available for voluntary consultation and advice. **A.W.Smith** continues as Secretary of the Commission, **Hugh McNair** continues to look after the gas utilities and general inspection and **Geo.L.Guy** has been appointed Electrical Engineer.

**Constitution of Freight Train Crews.**—In answer to a question addressed to the American Electric Railway Association's question box, asking what are the practices of member companies regarding freight train crews, and how many brakemen are carried, when train consists of package motor car and trailing load of not over 250 tons is hauled without caboose car, and when train consists of locomotive and from 200 to 500 ton train with caboose, and when train is over 500 tons with caboose, **G.Gordon Gale**, General Manager, Hull Electric Co., Hull, Que., writes that the train crew consists of motorman, conductor, trolley man and brakeman.

**Montreal and Southern Counties Ry.**—The annual meeting was held at Montreal, Sept. 30. The following directors were elected for the current year: **E.J.Chamberlin**, President; **Frank Scott**, Vice President and Treasurer; **J.A.Yates**, Secretary; **W.H.Ardley**, Comptroller; and **W.H.Biggan**. **J.E. Dalrymple** is Vice President in charge of traffic, and **W.B.Powell** is General Manager.

**The Toronto and York Radial Ry.'s Terminal Connection on Yonge St., Toronto.**—The appeal of the City of Toronto against the Ontario Railway and Municipal Board's order allowing the Toronto and York Radial Ry. to connect its tracks on Yonge St. with its new terminal station on Farnham Ave., came before the Appellate Division, Toronto, Sept. 29, judgment being reserved.

## Electric Railway Notes.

A new time table and schedule of rates was put in force on the London and Port Stanley Ry., Oct. 4.

The Toronto Street Railwaymen's Union announced recently that 270 of its members had enlisted for active service.

The Commissioner of Works for the City of Toronto has been authorized to buy a reciprocating track grinder for \$1,710 f.o.b., Philadelphia, Pa.

The Six Nations Council of Indians on the reserves near Brantford, Ont., Oct. 1, expressed themselves as being favorable to the building of an electric railway through the reserve.

The Toronto City Council invites tenders for 13 double truck cars, 47 ft. long, for the Toronto Civic Railways. Four single truck cars have been received from the Preston Car and Coach Co.

According to press reports a project is under consideration for the erection of a joint terminal station in Brantford, Ont., for the Brantford and Hamilton Ry., and the Lake Erie and Northern Ry., the latter of which is now being electrified.

The Brantford City Council, passed a resolution, Oct. 12, directing the preparation of a bylaw for providing for the election in Jan., 1916, of three commissioners for the management of the Brantford St. Ry., and the Grand Valley Ry.

The cost of the investigation made by the Manitoba Public Utilities Commission in 1914, into the electrolysis of water mains, etc., in Winnipeg, amounting to \$7,671.50, was ordered to be paid by the Winnipeg Electric Ry. by Oct. 31.

Calgary Municipal Ry. employees have contributed \$800 towards the purchase of a machine gun for the 56th Battalion. The amount was collected and dealt with by the Calgary Municipal Railway Social Insurance and Sick Benefit Association.

The Regina, Sask., City Council is considering the rearrangement of the car schedule for the Sunday service. Owing to the heavy loss on the service it was proposed to abolish it, but upon representations made it was decided to cut down the service to the minimum.

**Wilford Phillips**, Manager, Winnipeg Electric Ry., is quoted as saying, Oct. 7, that as soon as the town of Stonewall, Man., was ready to approach the company with an agreement for the running of Sunday cars within its area the company was ready to put on a service.

A decision was given in a Quebec court, Oct. 14, refusing to allow Controller Hebert to inscribe an appeal against Justice MacLennan's decision throwing out his motion for particulars in the action of St. Martin against Hebert, respecting the litigation arising out of the Board of Control-Montreal Tramways Co. situation.

The Toronto Board of Control discussed, at the end of October, the question of taking over the operation of the Mimico and Scarboro Divisions of the Toronto and York Radial Ry., as part of the civic railway. These sections are already owned by the city, and operated by the T. & Y.R.R. for public convenience.

The new Sunday car schedule on the Regina, Sask., Municipal Ry. was put in operation Oct. 17. The cars run on a 15 minute headway between 10 a.m. and 10 p.m. It is hoped that by thus cutting off 3½ hours of service it will be possible to do away with the average loss of \$45 a Sunday resulting hitherto.

The British Columbia Electric Ry. em-



ployes have been organized for first aid instruction during the coming winter. W. G. Murrin, General Superintendent, has offered a trophy or individual medals for teams of five men which show superiority at a practical demonstration of first aid work at the close of the session. Five teams have already been entered.

The British Columbia Electric Ry. carries on a technical school during the winter months for the benefit of its employes. The school was established in Jan. 1904. The school in Vancouver opened its 12th season, Oct. 6, under the charge of J.G. Lister, and G. Porter, the company's Chief Electrical Engineer, has offered prizes for the best sets of notes of the lectures for the current season.

The advisory committee appointed by the Edmonton, Alberta, City Council to investigate matters connected with the Edmonton Radial Ry., decided, Oct. 18, to recommend that an independent commission be appointed for its management. The report of the citizens' special committee, together with the recommendations of the Council's advisory committee thereon, is under consideration by the Council.

The City Treasurer reported to the Montreal City Council, Oct. 13, that the Montreal Tramways Co. had failed to pay a balance of \$20,000 alleged to be due for snow cleaning last winter, and that it had also failed to file with the city, in accordance with bylaw 210, a statement showing its gross receipts for the year ended Sept. 1, upon which is based the percentage it is obliged to pay to the city.

One of the cars of the Quebec Ry., Light and Power Co., ran on to the Victoria Park bridge, Quebec, Oct. 1, while the swing span of the bridge was partly open. The car fell over, but was held in a vertical position, caught fast between the pier and the end of the bridge. The passengers, together with the motorman and conductor, escaped with but slight bruises, a rather remarkable and providential escape.

The Hamilton, Grimsby and Beamsville Electric Ry.'s appeal against the Ontario Railway and Municipal Board's order directing the company to provide sanitary conveniences upon its cars, and at Grimsby station, and to file plans for the same has been heard at Osgoode Hall, Toronto. The company contends that the Board has no power to make the order, inasmuch as the H.G. and B.E. Ry. connects with Dominion chartered railways, and it further denies the necessity for such conveniences, which it says will be objected to by passengers and others. The court reserved judgment.

The City of Edmonton, Alberta, is agitated over a proposition by the Wabamun Power and Coal Co., to finance a company with the title of the Edmonton Power Co., to supply electric energy in the city. The company promises to give much cheaper rates than are now being charged by the city power plant, and claims if its project is taken up, that the Edmonton Radial Ry. will be able to save considerably upon its power. The City Solicitor, Sept. 28, advised the Council that it could not enter into any agreement with the company. The Council, however, is in favor of preparing a bylaw, and submitting it to the ratepayers, and then, if it is approved, going to the Legislature for the necessary powers. If the proposition is adopted it will practically mean the abandonment of the existing city power plant.

**Brantford Municipal Ry.**—The earnings of the street railway in Brantford, Ont., for three weeks ended Oct. 16, were \$2,841.98 against \$1,655.42 for same period 1914.

## Attempts to Reduce the St. Thomas Municipal Railway Deficits.

St. Thomas, Ont., press dispatch, Oct. 1: "As a drop in the big bucket of deficits in the management of the municipal railway the committee has decided to cut off the service of all the station cars. The Manager reported that the revenue from the station cars during September was \$69.53 and the wages of the men \$154.98, leaving a deficit of \$85.45, or over \$1,000 annually, for this service alone. This will mean the dismissal of a car crew, but two of the men will be given employment in the department. This deficit does not include the cost of power or wear and tear of the equipment. The hours of two extra belt cars were also cut down 4½ hours each day, making a saving of \$83.16 a month; and to popularize the service the committee ordered the sale of 8 and 10 tickets for 25c. Chairman Webster, to save the city a further annual shortage of \$18,000, which is coming at the end of the year, would abolish the system altogether."

## Electric Railway Finance, Meetings, Etc.

**British Columbia Electric Ry., and allied companies:**

	Aug. 1915	Aug. 1914	July 1 to Aug. 31, 1915	July 1 to Aug. 31, 1914
Gross earnings	\$305,426	\$274,812	\$1,017,849	\$1,064,835
Expenses	487,392	512,174	971,273	1,039,178
Net Earnings	19,734	162,638	46,576	325,657

The percentages paid to the City of Vancouver for the first nine months of the current year are \$28,224.36 less than for the same period last year. The amount paid for September was \$3,140.75, against \$7,003.31 for Sept., 1914. The passengers carried on the Vancouver city and suburban lines in September was 2,139,217, against 2,951,980 for Sept., 1914. The passengers carried for the nine months of the current year shows a decrease of about 11,000,000 from the same period of 1914.

### Cape Breton Electric Co.—

	Aug. 1915	Aug. 1914	July 1 to Aug. 31, 1915	July 1 to Aug. 31, 1914
Gross earnings	\$33,225.71	\$32,742.16	\$64,545.51	\$64,208.66
Expenses	18,159.39	17,484.69	35,825.68	37,150.26
Net earnings	15,066.32	15,257.47	28,719.83	27,058.40

**Detroit United Ry.**—The ratepayers of Detroit, Mich., will vote Nov. 2 upon the City Street Railway Commission's plan for acquiring the D.U.Ry.'s city lines. A three-fifths majority is required.

**Edmonton Radial Ry.**—From a statement of the finances for the half year ended June 30, prepared by city officials for the Edmonton, Alberta, Property Owners' Association, it appears that the total deficit on the E.R.R. is \$706,677.59. A note to the table states that "the various deficits are being carried on open account in the entral books."

**Lethbridge Municipal Ry.**—Earnings for September, \$2,859.45; passengers carried, 57,165.

**Levis County Ry.**—The annual general meeting of shareholders was held at Levis, Que., Oct. 20, when the report for the year showed that considering the general decrease in business, the cost of renewing all the overhead lines and the ordinary expenses of maintenance, there was a satisfactory surplus. The directors for the current year are:—S.H. Ewing, President; Hon. R. Turner, Vice President; E.A. MacNutt, Secretary-Treasurer; John Forman, J. Blouin and Col. G.E. Allen-Jones. A.K. MacCarthy is Manager, and J.W. Brown, Assistant Secretary-Treasurer.

### London St. Ry.—

	Sept. 1915	Sept. 1914	Jan. 1 to Sept. 30, 1915	Jan. 1 to Sept. 30, 1914
Gross earnings	\$38,791.55	\$33,736.90	\$206,120.72	\$282,785.37
Expenses	15,538.68	11,899.58	90,742.54	83,177.31
Net earnings				

**Regina Municipal Ry.**—The revised estimates of the Regina, Sask., City Council for the coming financial year include the following items respecting the Municipal Railway: Cash loss to Dec. 31, 1914, \$16,312.92; estimated loss, 1915, \$123,295.96; total \$139,608.88. The surplus from other public utilities is estimated at \$34,483.31, leaving \$105,125.57 to be provided for. It is proposed to provide \$50,000 of this deficit from general taxation, and the balance out of property sales.

**Toronto Ry., Toronto and York Radial Ry., and allied companies:**

	Aug. 1915	Aug. 1914	Jan. 1 to Aug. 31, 1915	Jan. 1 to Aug. 31, 1914
Gross earnings	\$702,927	\$830,632	\$6,414,705	\$6,742,786
Expenses	365,093	432,906	3,280,047	3,447,359
Net earnings	397,534	417,733	3,065,656	3,265,427

**Toronto Ry.**—The receipts from Jan. 1, and the percentages paid to the city, for 1915, compared with those for 1914, are as follows:

	1915	City percentage	1914	City percentage
January.....	\$471,226	\$70.486	\$501,844	\$75.277
February....	440,324	67.047	461,274	72.060
March.....	488,468	94.141	530,751	102.159
April.....	467,702	93.540	501,435	100.287
May.....	468,953	93.790	534,465	106.893
June.....	450,582	90.116	525,033	105.106
July.....	449,086	88.821	495,882	103.772
August.....	447,968	89.953	507,912	101.582
September...	489,573	39.166	525,255	42.021
	\$4,173,872	\$725.700	\$4,583,851	\$809.148

### Winnipeg Electric Ry.:

	Aug. 1915	Aug. 1914	July 1 to Aug. 31, 1915	July 1 to Aug. 31, 1914
Gross earnings	\$251,189	\$322,762	\$2,251,467	\$2,760,944
Expenses	182,512	187,595	1,481,593	1,595,653
Net earnings	68,677	135,167	769,874	1,165,291

**Calgary Municipal Railway Bylaw.**—A new bylaw for the control of the Calgary Municipal Ry. is under consideration. It defines clearly the differences between questions of executive management and questions of policy. All matters of policy must be passed upon by the commissioners as a whole, and by the City Council in accordance with the provisions of the charter of incorporation. The duties and responsibilities of Superintendent T. H. McCauley are also defined, and A. G. Graves, one of the commissioners, is given wide powers, which practically puts him in control of the executive management. Superintendent McCauley has the right to employ men and to suspend employes for cause, but before anyone can be discharged Commissioner Graves must approve. All rules and regulations governing the working of the lines must be submitted to Mr. Graves for approval before being put in operation, and no bulletins governing the employment of men are to be posted by the Superintendent without Mr. Graves' approval. The bylaw also provides that there must be no discrimination against any employe who desires to join a trades union.

**The Toronto Ry. and the Outside Running Board on Summer Cars.**—The Ontario Railway and Municipal Board concluded a series of hearings, Oct. 1, respecting the proposed elimination of the outside running board from the Toronto Ry.'s summer cars. Several suggestions had, at various times been received, details of which were given in Canadian Railway and Marine World for September, together with some particulars of a type of car which the Board considered had better be adopted. This car has a total seating capacity of 42 persons, and has a longitudinal seat on the inner side of the car and cross seats on the other side. After considerable discussion, the Board decided that the company must build and have in operation 25 of these cars by Dec. 1. The experimental car which was arranged along these lines, is being altered to conform to the views of the Board's Consulting Engineer, J.C. Royce, after which a plan will be prepared and submitted to the Board for formal approval.



## Hydro Electric Power Commission of Ontario's Report on Electric Railways

Following are extracts from the report for the year ended Oct. 31, 1914, issued recently.

**London & Port Stanley Ry.**—Preliminary plans for two substations, for the electrical equipment of the London and Port Stanley Electric Ry., which are to be located at the Horton St. substation of the London Water and Light Commission, and in an extension to the Commission's high-tension transformer station at St. Thomas were prepared and specifications issued covering the purchase for each station of two 500-kw., 1,500-volt d.c. 25-cvle rotary converters with the necessary transformers and 13,200-volt a.c. and 1,500-volt d.c. switchboard equipment. Tenders were received for this apparatus, and the contract for the rotary converters, the necessary transformers, and the switching equipment for the two substations was placed with the Canadian Westinghouse Co. Provision is made in the design of the stations for addition, rotary converters, and feeders in order to take care of further developments in the railway's business. The Horton St. station in London is already constructed and plans and specifications are being prepared for the necessary extension to the Commission's transformer station at St. Thomas. The equipment will be installed by the Commission under the supervision of the contractor's engineer.

**London St. Ry.**—For the purpose of supplying direct current power to this railway the London Board of Water and Light Commissioners called for tenders on two 500-kw., 600-volt rotary converters with two banks of 13,200-volt, 25-cvle transformers and the necessary direct-current and alternating-current switching equipment. These tenders were referred to the Commission for their recommendation, and after checking them carefully the Commission recommended that the contract be awarded to the Canadian General Electric Co. The contract was prepared and the apparatus inspected during the process of manufacture by the Commission. The rotary converters, transformers and the switching equipment were installed in the extension to the Horton St. substation by the local staff.

**Brantford Municipal Ry.**—The City of Brantford having taken over the lines and equipment of the Grand Valley Ry., and the contract for its power being about to expire, negotiations were entered into to obtain this load for the local hydro-electric department. A study was made of the load conditions of the railway, and of the cost of giving the required service. It was apparent that it would be advantageous to shut down a steam plant supplying power to this road near Paris, and to purchase power from Paris at this point. An agreement has been drawn up and submitted, covering the delivery of this power. There is every possibility of this railway also taking power from Brantford on the expiration of the present agreement.

**Electric Railway Projects.**—The work carried on by the electric railway department during the past year may be summarized as follows:—Advice to municipalities, routes, etc., of proposed lines. Reconnaissance and rough reports on various lines. Preliminary surveys of desired routes. Preparation of plans and profiles of preliminary surveys and projection and taking out of quantities on lines along such surveys. Estimates of cost of construction and equipment of proposed lines. Collection of traffic data from the various districts showing the amount and distribution

of business both inbound and outbound. Estimates of the annual revenue and expenses that might be expected from the construction and operation of various lines. Reports and advice to municipal committees and representatives as to the most profitable routes of those surveyed through various districts. Assistance to municipalities in the preparing of bylaws and presentation of such to the ratepayers for ratification. Preparation of standard estimating costs of each portion of the work entering into the construction of the complete line. Preparation of standard rules and specifications with drawings covering the forms of construction proposed for these lines. Preparation of specifications and plans covering standard materials such as rails, concrete pipe, etc., required for roadbed construction. Selection of a system of electrification. Compiling statistics of traffic, revenue and expenses of existing railways for the purpose of comparison with proposed lines. Preparation of specifications for electrical equipment for substations, cars and locomotives. To carry on the above work in all its details required a very careful and complete study of plans, costs and operating statistics of existing railways now in operation in Canada, United States and Europe.

To date, resolutions have been received from 138 townships, 38 villages, 42 towns, 11 cities, 4 police villages, and 7 miscellaneous committees, such as boards of trade, etc., asking for surveys, reports and estimates on proposed lines. Two survey parties have been at work for almost the entire year making preliminary surveys of some 1,200 miles of line. The information so obtained has been plotted and used for the purpose of preparing estimates on the cost of roadbed construction. In making the surveys topography was taken for approximately 400 ft. on each side of the traverse line. When this information was plotted the proposed lines were then projected and quantities figured along such lines.

Traffic men have been sent into the various districts for the purpose of collecting information showing the amount of freight and passenger business that is obtained by the present railways in the district, and whose duties are to estimate on the business that may be done by the proposed lines. Full information is now being taken by these men, showing not only the amount of business, but the revenue that is derived therefrom and the destination or shipping point of freight business; thus the information may be used for other lines that may be proposed in the future without requiring the traffic men to return to the district.

The most important work done during the year was in the Toronto-Northeastern district. Meetings with the representatives of the municipalities in this district were attended during the year, and it was decided by the representatives during the summer that the councils of the municipalities should pass bylaws to cover the construction, equipment and operation of the line, and that these bylaws should then be placed before the people on Oct. 19 for ratification. Agreements between the Commission and the municipalities covering construction and operation of the line were prepared and a number of meetings were held in all centres throughout the district, for the purpose of explaining the proposition to the ratepayers. Representatives of the Commission were present at practically all of these meetings to assist in giving this in-

formation, and the result of the voting on Oct. 19 showed that the municipalities as a whole were very anxious for the construction of the line along the route recommended by the Commission. Eleven out of the 13 municipalities that voted on that date passed their bylaws by very substantial majorities.

**Judgment re Sandwich, Windsor, and Amherstburg Ry.**—In the Appellate Division of the Ontario High Court of Judicature at Toronto, Oct. 16, judgment was given on the City of Windsor's appeal from an order of the Ontario Railway and Municipal Board of April 20, 1915. The Sandwich, Windsor, and Amherstburg Ry. applied under sec. 250 of the Ontario Railway Act for an order approving the construction of applicant's railway along Ferry St., Chatham St., and Victoria Ave., Windsor; and also for an order approving the construction of a double track railway along London St., Windsor. At the hearing the board made an order approving of the application. Appeal argued and order of board varied by making it without prejudice to the right of the appellant to contest the right of the company to construct the lines that are in question and the validity of the by-law. If an action is brought within three months, costs of the appeal to be costs in the cause of that action. If no action brought, appellants are to pay the costs of the appeal.

**System of Paying Toronto Civic Railway Employees' Wages.**—The Toronto City Works Commissioner was instructed recently to report to the Works Committee regarding the method of paying the civic railway employees. Formerly the City Treasurer handed the wages to the Works Department, and they were delivered to the individuals, but the Treasurer objected to the Department acting as a paymaster, and instituted a system of paying the men while on duty, which did not work satisfactorily. He then placed cash in certain banks, and the men were required to call there when off duty for their pay. The Treasurer objects to reverting to the first system, and suggests that he send a cheque for the full amount required, to the Works Commissioner, who will be responsible for the payments to the men. The Works Commissioner states that he is not prepared to assume the function of the Treasurer in this regard.

**Toronto Ry. and Overcrowding.**—The appeal of the Toronto Ry. against a conviction made in 1911, for permitting overcrowding on its cars, was dismissed by the First Divisional Court, Toronto, Oct. 13, and the conviction confirmed. In the course of the appeal the jurisdiction of the Courts to deal with the matter was questioned, it being claimed that the Ontario Railway and Municipal Board was in duty bound to do so, but it was ruled that that might apply between the company and private persons, but not between the Crown and the company.

**The Canadian Bridge Co.** has been incorporated under the Dominion Companies' Act, with an authorised capital of \$2,000,000, and office at Walkerville, Ont., to take over the assets and business of the Canadian Bridge Co. there, at present carried on under Ontario laws, to pay for the same in shares of the new company, and to assume the outstanding liabilities, contracts, orders and obligations of the Ontario company. The provisional directors are:—F.C. McMath, W. Pope, G.E. Roehm, C.M. Gooderich, engineers, Detroit, Mich.; A.L. Colby, engineer, and C. T. Miller, Secretary, Walkerville, Ont.

**Guelph Radial Ry.**—The company is repairing the permanent roadway on Wyndham St., and Elora Road, Guelph, Ont., about 3,000 ft. A.H. Foster is Manager. (Feb., pg. 70.)



# Marine Department

## Transfer of C.P.R. Ocean Steamship Interests to the Canadian Pacific Ocean Steamships, Limited.

At the C.P.R.Co.'s annual meeting in Montreal, Oct. 6, the following resolution was adopted:—Whereas the company is the owner of 57,637 fully paid shares of the par value of £10 each of the Allan Line Steamship Co., Ltd., and is also the owner of the several steamships engaged in Trans-Atlantic and Trans-Pacific service, a list whereof, with their respective ports of registry, is attached hereto marked schedule A.

[The vessels named in the list are: Empress of Britain, Missanabie, Metagama, Lake Manitoba, Mount Temple, Lake Michigan, Montreal, Montfort, Monmouth, Milwaukee, Medora, Empress of Russia, Empress of Asia, Empress of Japan, Monteagle, Melita, Minnedosa.]

And whereas the company is desirous that its said steamers and those of the Allan Line, of which it has control through its holdings of the said shares in the Allan Line, shall be operated under the management and control of a separate company, and it has accordingly procured the formation of a steamship company under the name The Canadian Pacific Ocean Services, Ltd., incorporated under the Companies Acts, 1908 and 1913, of the United Kingdom, with a capital of £2,000,000 divided into 200,000 shares of £10 each, and having its registered office at 8 Waterloo Place, in the County of London (hereinafter called "the Steamship Company"), inter alia for the purpose of acquiring and operating the said steamships and acquiring the said shares; and whereas, the company is by statute empowered to sell its steam or other vessels engaged in ocean service to the steamship company upon such terms and for such consideration as may be determined by the boards of directors of the steamship company and this company, and is further empowered to guarantee payment of the principal and interest of and acquire and hold stock, bonds, debentures, debenture stock, or other securities of the steamship company; therefore be it resolved that the company do sell to the steamship company the said 57,637 fully paid shares of the Allan Line Steamship Co., Ltd., do transfer to the steamship company the several steamships named in the schedule attached, and the good will pertaining thereto, together with their several boats, machinery, gear, tackle, apparel, furniture and other equipment, including all stores and bunker coal, and do contemporaneously with the transfer of the shares of the Allan Line, execute in favor of the steamship company absolute bills of sale of the said steamships in the form required by the Merchant Shipping Acts, 1894 to 1914, the consideration for the sale of the said shares of the Allan Line Steamship Co., Ltd., being £576,370, which shall be paid and satisfied by the allotment and issue to this company of 57,637 shares of the steamship company, fully paid up and non assessable, and the consideration for the transfer of the said steamships and good-will pertaining thereto, being the payment by the steamship company to this company of £4,252,400, which shall be paid and satisfied by the allotment and issue to this company of 138,654 shares of the steamship company, allotted and issued as fully paid up and non assessable, and by the delivery to this company of first de-

bentures or debenture stock of the steamship company, bearing interest at the rate of 5% per annum, to the amount of £2,865,860, which, together with such first debentures or debenture stock as may be issued by the steamship company ranking pari passu therewith, shall be secured as a first floating charge upon the whole of the undertaking, property and assets of the steamship company, present and future, the deed securing such first debentures or debenture stock to contain all usual and appropriate provisions for the protection of the holders of the said first debentures or debenture stock secured thereby and to be approved of by the company's counsel.

Be it further resolved—That the agreement between the company and the Canadian Pacific Ocean Services, Ltd., dated Aug. 9, 1915, now submitted to this meeting, be, and the same is hereby approved, and the execution thereof by the President and Secretary of the company be, and the same is hereby ratified and confirmed, the said agreement to be effective from Nov. 1 next, or from such later date as the directors may determine, and be it further resolved, that pursuant to the statutory authority in that behalf, this company do guarantee payment of the principal and interest of such bonds, debentures, debenture stock or other securities of the steamship company as may be from time to time issued by the steamship company, with the consent of this company in writing under its corporate seal.

## Unsatisfactory Work on Toronto Harbor Contracts.

The Minister of Public Works, when interviewed at Toronto, Oct. 21, respecting complaints as to the work on certain contracts in connection with the Toronto harbor improvements, is reported to have stated that the contractors had not fulfilled their obligations. Certain defects were discovered and the contractors admitted that such a condition was due to lack of proper inspection. They subsequently brought forward a plan for remedying the defective work, and to satisfy the Government along certain lines, two of the subcontractors agreed to experiment on two stretches of 100 ft. each. This experimental work, when completed, was condemned by the Government and Harbor Commission's engineers, whereupon the contractors agreed to act in accordance with the original plans. He had, in company with the engineers representing the Government and the Harbor Commissioners, inspected the faulty work, and had made it known to the contractors and subcontractors that if they were not prepared to comply with the stipulated conditions, their deposits would be estreated and utilized by the Government for remedying defects. The contractors have been asked to continue the work until forced to shut down by weather conditions, and if there is any branch of the work which can be continued throughout the winter, it will be proceeded with.

The work in the harbor was shut down in July, and certain difficulties were experienced in connection with the work of one of the subcontracting firms, which attempted to remove its plant, when called upon by the general contractors to make defects good. The Canadian Stewart Co., the general contractors, admit responsibility for the work of subcontractors, and state that any defects will be made good, and the original plans adhered to.

## Submarine Chasers Being Built in Canada.

"The Canadian Vickers Co., of Montreal, is said to have an order to build 300 submarine chasers for Great Britain. It is further reported that 25 have been delivered and have played an important part in the destruction of German submarines, and that eight of the small craft crossed the Atlantic Ocean under their own power. The submarine chasers, which are proving an increasingly important factor in minimizing the potentiality of Germany's submarine campaign, are 75 ft. long and have a surface speed of 20 knots and a submerged speed of 15. They draw 14 ft. of water. They carry no torpedoes but are armed fore and aft with two 3-in. guns. The chasers are designed to co-operate with aeroplanes in sighting submarines. Once a submarine is sighting the chaser speeds so swiftly to the attack and describes circles with such rapidity that the larger submersible is placed at a distinct disadvantage in retaliating. Whether the chaser succeeds in damaging the submarine or not it has little difficulty in escaping because of its higher speed, its superior control and the relatively small surface of exposure it presents to a torpedo. All the steel for a big chaser contract is the product of the Bethlehem Steel Co., the Crucible Steel Co. and the Canada Steel Co. of Hamilton, Ont. The engines are of a Diesel type, closely corresponding to those the Electric Boat Co. of New London, Conn., built for the 10 submarines that crossed the Atlantic in July and August. Like the larger craft, the chasers are equipped with both heavy oil engines and electric motors."

The foregoing is reproduced from Shipping Illustrated, New York. We have abstained from referring to the matter hitherto, in deference to the Canadian press censorship regulations, but now that it has been dealt with in a United States paper it has been passed by the Chief Press Censor for Canada for publication here.

## The Grand Trunk Pacific Railway Dry Dock at Prince Rupert, B.C.

A number of official tests of the dry dock at Prince Rupert, B.C., which was completed recently, were made during the early part of October, in the presence of Dominion Government engineers, the designer and the contractors.

The dock is built in three sections, and has a total length of 604 ft. 4 ins. on the keel blocks. It is capable of taking the largest vessels at present operating on the Pacific Ocean, and to enable it to handle smaller vessels economically, it is built in three sections. One section consists of 6 pontoons, and is 269 ft. overall, and there are two sections of 3 pontoons each, 164 ft. long.

During the tests the three sections were joined, and the whole dock sunk to 26 ft. below the keel blocks, giving a total depth of 30 ft. from the pontoons to the surface. This was accomplished without any hitch, and 45 mins. after the starting of the pumps the dock was brought to its normal position.

The first vessel to use the dock was the s.s. Delhi, which was wrecked on the Alaska coast about a year ago, and towed to Prince



fluvium and docked during September for examination.

A full description of the dock and other structures connected therewith, with details and plans, was given in Canadian Railway and Marine World for Feb., 1912.

### Regulations for Trans-Atlantic Shippers.

The British Government has recently issued a few recommendations to shippers by Atlantic steamships, with a view to minimizing risk of delay when vessels are boarded for search whilst en route.

Shipments to neutral European, or Russian ports in the Baltic: In the case of goods shipped by a vessel which is to call at a neutral European port, it is recommended that bills of lading should never be made out "to order," but that they should be made out either to a named consignee, or to a bank or financial house of high standing with the remark "notify —", giving the name of the person or firm for whom the goods are ultimately designed. Goods shipped to Holland should be consigned to the Netherlands Overseas Trust.

Shipments to British, French or Italian ports, or to Russian ports not in the Baltic:—It is not necessary that goods shipped to a British, French or Italian port or to a Russian port not in the Baltic, should be consigned as above described, provided that it is clearly indicated in the bill of lading and in the manifest that the ultimate destination is as stated, and provided that the vessel is not to call at a neutral European port on her voyage.

Shipments to neutral ports outside Europe:—It is desirable in cases where the use of another form of consignment might lead to an interruption of the voyage, that goods shipped to neutral countries outside Europe should be consigned in the same manner as those shipped to neutral countries in Europe, but when this course is not adopted, it should be clearly indicated in the bill of lading that the destination of the goods is outside Europe, and is not in Asiatic Turkey, nor adjacent to that enemy possession.

In all cases it is essential that the bill of lading or a certified copy of it should be on board the vessel.

### Canada Steamship Lines' Prospects.

J.W.Norcross, Vice President and Managing Director Canada Steamship Lines, Ltd., is reported to have stated at Montreal, Oct. 16, that the rates prevailing for the transportation of grain on the Great Lakes and the Atlantic will have a favorable influence on the company's earnings this year. The present rates from the head of the lakes to Buffalo, Port Colborne and Montreal are considerably in excess of the normal rates at this time of year, ranging from 5½¢ to 5¾¢ to Buffalo, and 5½¢ to Georgian Bay ports. The dispatch received by vessels loading and unloading has been very good, and elevators have a large amount of space for the reception of grain, as up to the present the bulk of the grain had been moved via Buffalo, from whence it has been rushed by rail to the seaboard.

He announced that arrangements have been made for the chartering of 17 of the company's vessels for the entire winter.

The Quebec Steamship Co., a subsidiary of Canada Steamship Lines, Ltd., operating entirely on the Atlantic, has benefited by the extraordinary conditions existing in shipping generally, and its earnings are said to have been far in excess of those for any previous year.

## The Sir Hugh Allan-De Levis Collision.

An investigation into the causes which led to a collision between the Montreal Harbor Commissioners' tug, Sir Hugh Allan, and the Dominion Government s.s. De Levis, at Point Citrouille in the St. Lawrence River, Aug. 21, was held at Montreal, Sept. 30, before Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. C. Lapierre and J.O.Grey, as nautical assessors.

R. Chevrier, master of the Sir Hugh Allan, stated that he holds a master's certificate for a passenger steamer in the minor inland waters. He left Montreal, Aug. 20, at 8.30 p.m., for Three Rivers and Quebec, having on board as passengers the Minister of Public Works, the Secretary of State, and two others. The night was clear and the usual courses were followed until when off Champlain, or a little lower down he noticed the green light of a vessel westward bound, on his port side, which crossed over to his starboard, and upon seeing this he starboarded his helm in order to have more room to pass; the green light and the Champlain lights were nearly in one. We noticed suddenly that the green light disappeared and the red light of the oncoming vessel was shown, and he therefore hard a starboarded his helm. His vessel was going at about 12 knots, and he subsequently ordered full speed astern; but the collision happened within a few seconds of this order. He noticed some of the crew of the De Levis on his vessel, but was not sure who they were. The vessels parted from each other, and he ordered the starboard engine ahead, but failed to keep close to the De Levis, as she was circling around, her engines going ahead. In the meantime the order to lower the boats was given, which was executed in fairly good time, and men who were seen struggling in the water were picked up, and the rescue of the remainder of the crew and passengers was effected without loss of life. Meanwhile the De Levis had stranded on the south shore. He was on duty from the time the vessel left Montreal until after the collision, which occurred at 3 a.m., Aug. 21. The Sir Hugh Allan is a twin screw, steel ship, of 10.37 tons net and 354.23 tons gross, with triple expansion engines. She carried a crew of 21 all told.

J. B. Blais, master of the De Levis, stated that his vessel was wooden built, with twin screws, having a crew of 19, and that she carried two boats, one small and one medium size—the latter capable of carrying 18 persons—and some 50 life belts. He left Batiscan carrying the crew of some of the government dredges, and had 78 persons on board, including the crew, at the time of the collision. Before rounding Point Citrouille he kept constantly passing well to the northward of the channel, some 300 ft. north of the gas buoy, when in order to get the Champlain lights he had to haul more to his right, exhibiting his red light to oncoming vessels, two of which he saw, the first being the Sir Hugh Allan. Upon seeing the Sir Hugh Allan he ported and the collision happened shortly after, but not before the order to stop was given. He then came out of the pilot house and gave the order to lower the boats and see to the passengers. He fell on to the deck of the Sir Hugh Allan through a broken rail, caused by the collision, and in falling hurt his back. There was no lookout, no officer other than himself being on duty, and three of the passengers were in the wheel house with him. He admitted that his vessel was going ahead after the collision, and made one and a half circles before she stranded, and stated that he had tried to steady his helm, but found it would not answer. He

has been in command for eight years, and holds a certificate as master of a steam tug in minor inland waters, and never had an accident before.

The mate of the Sir Hugh Allan, E. Carpentier, produced his certificate as mate of a passenger steamer in minor inland waters. He stated that he was engaged as mate, not as pilot, and corroborated the master's evidence, but added that he had no sleep since 6 o'clock of the morning before that on which the accident happened. Shortly before 3 o'clock he took the wheel from the wheelman, the latter remaining in the wheelhouse; he noticed the green light of a small vessel on his port bow, crossing over to starboard, and thought it was a tug going toward a dredge which was anchored in the vicinity, but upon seeing the red light he knew his surmise was not correct, and operated the wheel according to the instructions he was receiving from the master.

The second engineer of the De Levis, Leon Crepeau, stated that he was on duty at the time, the first engineer being in his room; that the moment the impact occurred he immediately left his engine room and jumped on to the deck of the Sir Hugh Allan, without stopping his engines, which were going full speed ahead at the time of the collision, and after. He swore that he saw Capt. Blais, the steward and fireman and watchman on the deck of the Sir Hugh Allan when he looked about.

The first engineer of the De Levis described how, when the impact took place, he was in his room in bed, although awake, and how he succeeded in getting his window opened, went on deck and closed the steam of the boiler, the engines stopping and the fires being eventually put out.

The court came to the conclusion that the collision, which was providentially without loss of life, was due to the default of the master of each vessel in failing to carry out article 25 of the Rules of the Road, in which it is said that when vessels are in sight of each other they shall indicate the course about to be taken, by one blast, meaning, "I am directing my course to starboard"; two blasts, "to port," or three blasts, "My engines are going full speed astern." Article 25, requiring vessels in narrow waters to keep to their own side of the channel, was broken by the Sir Hugh Allan. The master of the Sir Hugh Allan had no right whatever to starboard his helm when he saw the green light of the De Levis crossing his bow from port to starboard, as he was leaving his own side of the channel. He should have hard aported and at the same time ordered full speed astern. Moreover, he must have known, if at all acquainted with the River St. Lawrence, that a vessel going west at that part of Point Citrouille must necessarily show her green light, then in rounding the point, in order to get Champlain lights in one, the red light must become visible. The reason given by his mate, who acted the part of pilot, that he thought it was a tug serving the dredge, cannot be accepted. It was only a supposition, and such being considered in the light of an uncertainty, precautionary measures should have been adopted either by stopping his vessel, or which is more in accordance with the rules of the road concerning narrow waters (article 25), he should have sounded one blast and ported his helm, taking his own side of the channel, which he failed to do. Instead, at the appearing of the red light which he had brought broader on his starboard bow by starboarding his helm, he continued to starboard, hard to starboard,



without giving any signal of his intention, maintaining his full speed until the collision was inevitable. When, according to the second engineer, the stop order was received, the impact occurred almost immediately. When his attention was called to the statement he had made to the Harbor Commissioners, which differed in many respects from his evidence, he stated that the evidence he was now giving was true, and that the statement made in writing was done in a hurry. As to his work in rescuing the crew and passengers of the *De Levis*, the evidence shows that he did all that could be done under the circumstances. For failing to observe the rule of the road, which contributed to the collision, his certificate is suspended for one year; but the court recommends that a mate's certificate for passenger steamer in minor inland waters be issued to him. This recommendation is due to his past good services, and to the aid he rendered in rescue work. The mate, who only obeyed the master's instructions, is not found to blame.

With regard to the captain of the *De Levis*, J.B. Blais, it is found that he also failed to signal his alteration of course when turning Point Citrouille and finding the *Sir Hugh Allan* was constantly showing its green light to his red, the court is of opinion that he should have sounded one blast, showing that he intended to keep his side of the channel. Moreover, his engines should have been stopped and his ship brought to a standstill when he found the other vessel acting strangely. The court is astonished to learn that he left his wheelhouse and post without ringing to the engine room the order to stop the engines, and that he found himself on board of the *Sir Hugh Allan*. We cannot accept the explanation that he fell through a space of 3 ft., due to a broken rail, on to the deck of the *Sir Hugh Allan*. The collision happened on the port side, and if it was his intention, as he avers, to give orders to lower boats, he would naturally have gone to the starboard side, which was uninjured, and allowed access to all parts of the top deck. He also stated that in falling he hurt his back, yet in some part of his evidence he said that if the boats of the *Sir Hugh Allan* had not been lowered he intended to jump and swim for his vessel. This contradicts his story of being injured by the fall. By his action in leaving his ship and crew to their fate he has shown himself unfit to be in charge of a vessel and in command of a crew. This court has always adopted stern measures in such cases, and on this occasion will not modify them, and therefore it considers that in the interests of the shipping public, and for the safety of the navigation of the River St. Lawrence, he be relieved from further responsibilities as a ship master, and hereby cancels his certificate.

We also cancel the fourth class certificate of the second engineer of the *De Levis*, Leon Crepeau, who, on his own evidence, abandoned his post to flee on to the deck of the *Sir Hugh Allan*. The steward was not called to give evidence, but the second engineer stated that he saw him on the deck of the *Sir Hugh Allan*. If such is the case, he, the steward, deserves the epithet applicable in such a case. If the duties of the steward on board of the *De Levis* are similar to those on board of every well disciplined vessel, he should have been at his post, attending and helping the passengers, especially the four women who happened to be on board. This court wishes to express itself as being absolutely opposed to a system prevailing on small craft of having no one on the look out, likewise entertaining passengers or anyone in the wheelhouse, the entrance to which should be prohibited

to all but those who have duties to perform. We also wish to suggest that some system of faithfully keeping a record of movements of these vessels, to be entered either in a log or journal, be inaugurated and enforced. This applies to both deck and engine room.

(Editor's Note.—In mentioning this collision in our September issue, the name of the Government vessel was given as *Levis*, which is the name under which she was registered, and as she appears on the Canadian register under no. 133904. We are, however, officially advised that her correct name is *De Levis*, and that it was through an error that she was registered as *Levis*.)

### Harbor Improvements at Vancouver.

S. M. McClay, one of the harbor commissioners for the port of Vancouver, B.C., in speaking at the American Association of Port Authorities' convention at San Francisco recently dealt with the improvements which the harbor commissioners are making and proposing for Vancouver. He stated candidly that the general equipment of the harbor and the facilities generally are not all they should be, considering the size and importance of the harbor, and announced that in the near future the harbor will be equipped with all the necessary facilities for handling vessels and loading cargoes with the utmost dispatch.

He said: "A new reinforced concrete wharf 800 ft. long, with a frontage of 300 ft. and a depth of 35 ft. at low water, is nearing completion. It is situated in the central section of the harbor and is of a construction new to the Pacific Coast, consisting of cribs reinforced with concrete and a heavy mass wall of concrete on top. This wharf will be furnished with two sheds 800 x 80 ft. Adjoining is a grain elevator now under construction and expected to be ready in time for at least part of this year's crop. There is every reason to believe that, with proper facilities for handling it, grain will come to Vancouver in steadily increasing measure from the western wheat growing provinces, more particularly as it is an open port all year round. In recognition of this the elevator is being constructed. It has a total storage capacity of 1,250,000 bush., a receiving capacity of 20,000 bush. an hour and a loading capacity of 60,000 bush. an hour, which can be loaded at the same time either to two boats at the rate of 30,000 bush. an hour or to four boats at the rate of 15,000 bush. an hour. The sacking plant is capable of sacking from 3,000 to 5,000 bush. an hour. This elevator is the first large grain elevator to be built on the Pacific coast of Canada, and it is confidently expected that its usefulness will justify the building of others at an early date.

"In False Creek, which is a small arm of the sea opening off the outer harbor, there are about 42 acres of tide flats which are uncovered at low water. These flats were crown granted to the commissioners, who have completed arrangements for their reclamation. When the work is completed this area will be used for industrial and warehouse sites with trackage and waterfront, which will be rented on long leases at low rentals. More applications for these sites have already been received from industrial concerns than the area will accommodate. This work is really only the first instalment of a larger project which is planned, but has not sufficiently materialized for public announcement.

"Last but not least among the important acquisitions to which Vancouver is looking forward is a drydock and shipbuilding industry, for which arrangements have been completed. The need for such a concern

has been frequently demonstrated, and in subsidizing the company which has received the contract the Government was careful to look ahead, as is indicated by the facts that the price is \$5,458,416.37, and the site secured comprises 60 acres. Proud as we are of our harbor, we realize that there are many respects in which it is capable of improvement—better fire fighting appliances, better policing and so forth—and although it will mean much time and labor it is the determination of my colleagues and myself to continue our efforts for the realization of our ideal—a port second to none."

### Proposed Additional Lake Steamships For Atlantic Ocean Service.

A Montreal press dispatch states that as a result of efforts initiated by the Dominion Government, Canada Steamship Lines, Ltd., is having five of its lake vessels overhauled to make them entirely suitable for trans-Atlantic service. The company has a number of vessels, built in Great Britain, some of which are already in service on the Atlantic. The report states that the five vessels which are being overhauled have capacity for carrying 100,000 bush. each, and that they will make two round trips to Europe before the close of navigation.

J.W. Norcross, Vice President and Managing Director, Canada Steamship Lines, Ltd., is reported to have said that there are already 21 of the company's vessels engaged in ocean and Gulf service, and that probably more of them will be used during the coming winter. We are officially advised that the press reports mentioned have misquoted certain remarks, and that anything which could be published at present would only be guess work.

The heavy demands which are being made on shipping and the high rates for freight, will probably draw a considerable number of vessels which are suitable for ocean travel, from the Great Lakes, but it is not anticipated that there will be a heavy transfer of vessels from the lakes to ocean service, as the majority of them have been specially designed and built for lake traffic only, and would not be suitable for ocean service.

**New Channel in St. Lawrence River.**—The Public Works Department has laid out a new channel through the Thousand Islands from Grenadier Island upward to the wide stretch between Wolfe and Howe Islands, is the St. Lawrence River. This channel is to be known as the Canadian Middle Channel, and is 300 ft. wide with at least a depth of 20 ft. It has been dredged where necessary, and swept to 18 ft. From Grenadier Island westerly it follows the old Canadian channel through the Raft narrows midway between the shores. At Wood Island two channels are provided, the Fiddlers Elbow for up-bound vessels, and the dredged cut south of Wood Island for downward vessels. From Lindoe Island lighthouse the channel extends in an almost straight line to 200 ft. south of the middle of Dumfounder Island and thence for 2,520 ft. to 430 ft. south from the west end of the small group of islands west of Dumfounder Island and thence to 730 ft. from the north extreme of The Punks and on to 320 ft. from Bass Rock Island and into the wide space between Wolfe and Howe Islands.

Schooner *Viola Pearl Co., Ltd.*, has been incorporated under the Dominion Companies Act, with \$1,000 capital and office at St. John, N.B., to acquire the schooner *Viola Pearl*, register no. 100,330 at port of Yarmouth, N.S., and to carry on a general shipping business.



### Atlantic and Pacific Ocean Marine.

The C.P.R. s.s. *Empress of Britain*, under requisition by the British Admiralty, was reported to be on fire in the Mersey, near Liverpool, England, Oct. 7. It took several hours to get the fire under control.

The Allan Line s.s. *Pomeranian* was reported to have run ashore near Havre, France, Oct. 21. She was released without damage on the same day, and proceeded to Havre under her own steam.

The Allan Line Steamship Co. has issued a writ against the s.s. *Kansan* for \$20,000 damages sustained by the s.s. *Pretorian* in collision on Sept. 15, in the St. Lawrence River, between the mouth of the Saguenay River and Cape Dogs.

The C.P.R. s.s. *Monteagle* was considerably damaged by fire, and a large quantity of cargo was destroyed while she was tied to her berth at Vancouver, B.C., Oct. 11. A press report states that in clearing out the burnt and damaged cargo, a large quantity of opium was discovered hidden in various parts of the hold.

The Blue Funnel Line s.s. *Calchas* was reported ashore off Point Wilson, near Port Townsend, Wash., Oct. 9, while downbound with cargo from Victoria and Vancouver, B.C. The freight was lightered and the vessel released and towed to port.

A press report from the Pacific coast, states that the Great Northern Steamship Co.'s s.s. *Minnesota*, which has been withdrawn from the Trans-Pacific trade on account of the drastic legislation respecting U. S. shipping, which comes into effect Nov. 1, is being sent to Great Britain, with a large cargo of grain, lumber and fish, and that she will be sold there.

The British Admiralty has released the C.P.R. s.s. *Empress of Japan* from further service for the present. She was requisitioned at the commencement of the war, and has been used in various services, chiefly in the transporting of troops. She is now at Hong Kong, being refitted for her customary service between Canada and the Orient, and is expected to sail about Dec. 1 for Vancouver.

The China Mail Steamship Co., incorporated in San Francisco recently, is reported to have purchased from the Atlantic Transport Co. a subsidiary of the International Mercantile Marine Co., the s.s. *China*, formerly owned and operated by the Pacific Mail Steamship Co. in the Pacific trade. This is

one of the five vessels which the International Mercantile Marine Co.'s receiver was authorized to purchase from the Pacific Mail Steamship Co., by the Federal District Court of New York, for \$250,000. She was built in 1889 and has a gross tonnage of 5,060.

### Maritime Provinces and Newfoundland.

The s.s. *Easington*, under charter to the Dominion Coal Co., which sailed from Sydney, N.S., during the last week in September for St. John, N.B., with coal, is reported to have been lost with all hands.

The Reid Newfoundland Co. chartered the s.s. *Durley Chine* from the Dominion Government recently, to take freight from Sydney, N.S., to St. John's, Nfld., as the accumulation at Sydney was greater than could be handled by the company's steamships *Kyle* and *Meigle*.

The s.s. *Kron Prinz Olav*, under charter to the Dominion Coal Co., which sailed from Sydney, N.S., Sept. 27, for Montreal, with coal, has not been heard of since, and it is feared that she has been lost with all hands. The Dominion Government s.s. *Montcalm* spent some time in searching the route but without success.

Various press reports indicate that the Newfoundland sealing steamships *Beothic*, *Bellaventure*, *Bonaventure* and *Nascopie*, will be sold to the Russian Government for ice breaking service at Archangel. These vessels are all of recent construction, specially adapted for the sealing trade and for service in ice.

The Nova Scotia Steel and Coal Co.'s s.s. *Wasis* is reported to have been sold to an English firm and to have sailed from Halifax, N.S., Oct. 17. She was built at Meadowside, Scotland, in 1883, and at different times has been named *West Coast*, *Val de Travers* and *Kampocus*. She is screw driven by engine of 53 n.h.p. and is of the following dimensions,—length 160.4 ft., breadth 25.1 ft., depth 13.5 ft.; tonnage, 480 gross, 255 register.

The electrically operated submarine fog bell, which was placed eastward of Harbor shoal, off the entrance to Louisburg harbor, N.S., has been discontinued, and a steel cylindrical bell buoy, surmounted by a pyramidal steel frame with an open framed bell shaped topmark, having dependent from it a submarine bell which will be rung at irregular intervals by the motion of the buoy

on the waves, has been placed about 500 ft. from the Louisburg gas and whistling buoy.

Among the provisions of the act to amend the acts imposing taxes on certain companies, passed by the Prince Edward Island Legislature, recently, is one which imposes on all companies carrying on the business of common carriers for the transportation of freight and passengers by steamships, which have their head offices or organizations in the province, \$100 each, and on the Charlottetown Steam Navigation Co., \$200; on all persons, firms or companies, whether incorporated or not, carrying on the business of common carriers, between Prince Edward Island and any other Province of Canada, or with any British possession, or any foreign country, \$100.

The Department of Public Works received tenders, Oct. 6, for the construction of extensions to the wooden shed at berth 15, and for the construction of a wooden shed between Rodney slip and Sand Point slip, at West St. John, N.B. The extensions to the shed at berth 15 will consist of two additional sheds, one being 199 ft. long, 80 ft. wide and 11 ft. 11 ins. from top of floor to eaves. The second extension will be 4 ft. higher than the first one. The wooden shed to be built near Rodney slip will be 155 ft. long, 70 ft. wide at one end, and 42 ft. wide at the other end, and 15 ft. 11 ins. from top of floor to eaves. The work is to be completed by Dec. 1, under a penalty of \$50 a day for each day in default.

### Province of Quebec Marine.

The Danish barque *Sostreame*, which was driven ashore at Ile Barnabe, near Rimouski, recently, has been abandoned as a total wreck.

The Dominion Government has awarded a contract to the Levis Wrecking Co., for \$27,000 for the raising of the s.s. *Montmagny*, which was rammed and sunk by the s.s. *Lingan* last year, near Grosse Isle.

The Gaspé Steamship Co.'s s.s. *Lady of Gaspé*, while bound from Montreal to Quebec and Gaspé ports, ran aground, near the Quebec Bridge site, Oct. 13. She was reported to be still aground, Oct. 23, but it was expected that she would be released with comparatively little damage.

McLean, Kennedy Ltd., has been incorporated under the Dominion Companies Act, with \$20,000 authorized capital and office at Montreal, to carry on a general steamship

### List of Steam Vessels Registered in Canada During September, 1915.

No.	Name	Port of Registry	Where and When Built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Engines, Etc.	Owner or Managing Owner
124	Vandon	Montreal	Glasgow, Scotland..... 1908	248 5	43 0	23 7	2,305	1,457	162 sc ...	Canada Interlake Line, Ltd., Toronto
125	Clifton Visger	Kingston, Ont.	Alexandria Bay, N.Y. 1895	81 8	12 4	4 4	30	21	13 sc....	D. W., and H. Munro, Gananoque, Ont.
126	D. A. Gordon	Montreal	Glasgow, Scotland..... 1910	249 3	43 0	23 7	2,301	1,434	162 sc....	Canada Interlake Line, Ltd., Toronto.
127	x Fordonian	Montreal	..... 1912	250 0	42 6	23 6	2,363	1,905	21 sc....	" " " " " "
137	Ontario No. 2	Montreal	Toronto..... 1915	307 5	54 0	20 2	5,568	3,376	294 sc....	Ontario Car Ferry Co., Montreal,

x Equipped with internal combustion engine.

x Equipped with internal combustion engine.

### List of Sailing Vessels and Barges Registered in Canada During September, 1915.

No.	Name	Port of Registry	Rig	Where and When Built	Length	Breadth	Depth	Reg. Tons	Owner or Managing Owner	
.....	Hopper Scow No. 1.	Quebec, Que.	Scow.	Lauzon, Que.	1910	99 0	25 0	10 2	135	La Cie. Generale d'Enterprises Publiques, Levis, Que.
.....	" No. 2.	"	"	"	1910	99 0	25 0	10 2	135	" " " " " "
.....	" No. 3.	"	"	"	1911	99 0	25 0	10 2	135	" " " " " "
.....	" No. 4.	"	"	"	1911	131 0	30 1	11 0	230	" " " " " "
.....	" No. 5.	"	"	"	1911	131 0	30 1	11 0	230	" " " " " "
.....	xFreddie A. Higgins	Charlottetown, P.E.I.	Schr.	Kennebunk, Me.	1882	80 6	24 2	6 2	78	J. M. Doucette, St. Louis, P.E.I.
.....	Grue No. 1.	Quebec, Que.	Scow.	Quebec, Que.	1912	58 3	23 9	6 9	86	La Cie. de Sable Union, Quebec, Que.
.....	W. C. P. No. 1.	New Westminster, B.C.	Barge.	Blaine, Wash.	1914	63 0	21 0	3 0	40	A. J. Engvick, Vancouver, B.C.

x A recovered wreck.



management and agency business, to own and operate steam and other vessels, render salvage and towing services, etc.

### Ontario and the Great Lakes.

The Farrar Transportation Co.'s s.s. Meaford grounded near the Detour lighthouse, Oct. 18, and was released with small damage the same day.

F. E. Hall and Co.'s s.s. Byron Whitaker, while bound to Montreal, with grain, broke her rudder, lost her wheel and grounded at Cardinal, Ont., Oct. 18.

An order in council has been passed establishing regulations for the governance of the ferry across the St. Lawrence River between Prescott, Ont., and Ogdensburg, N.Y., respecting rates on automobiles.

The Cleveland and Buffalo Transit Co., which has been paying 5% annually, has passed its dividend, the directors stating that this is necessary owing to decreased passenger traffic.

Canada Steamship Lines s.s. W. Grant Morden, Oct. 18, took what is stated to be the largest single cargo of grain carried by any boat on the Great Lakes, from Port Arthur to Port Colborne. The actual quantity is given as 476,315 1-3 bush.

The Shenango Steamship Co., of Cleveland, Ohio, is suing the Spo Dredging Co. for \$20,000 for damage sustained by the s.s. William P. Snyder in the Sault Ste. Marie Canal by striking a boulder, alleged to have been placed by the dredging company.

The Canadian Lake and Ocean Navigation Co.'s s.s. Turret Cape, when down bound from Fort William, Oct. 23, became disabled through trouble with her steering gear near Iroquois Point, and was towed to Sault Ste. Marie for repairs.

The s.s. North King, owned by Canada Steamship Lines, Ltd., and operated in the neighborhood of Kingston for some time, by the present company as well as by its predecessor, the Richelieu and Ontario Navigation Co., was taken to Sorel, Que., Oct. 21. It is stated that she will in future be used as a ferry around Montreal.

F.F. Wood, of Niagara Falls, who died there, Oct. 12, was one of the chief promoters of the Owen Sound Drydock and Shipbuilding Co., which was in process of formation prior to the war, with the object of constructing a dry dock and shipbuilding plant at Owen Sound, which the municipality had entered into an agreement to subsidize.

The Toronto Towing Co., Ltd., has been incorporated under the Dominion Companies' Act, with \$100,000 authorised capital and office at Toronto, to build, own and operate all classes of vessels and to carry on a general towing and shipping business. The incorporators are W.H. Irving, H.H. Davis, J.D. Rumball, J.S. Batty and N. Boynes, Toronto.

The United States Lake Survey reports the levels of the Great Lakes in feet above tide water for September, as follows:—Superior, 602.49; Michigan and Huron, 579.96; Erie, 572.20; Ontario, 245.45. As compared with the average September levels for the past ten years, Superior was 0.21 ft. below; Michigan and Huron, 0.85 ft. below; Erie, 0.19 ft. below and Ontario 0.78 ft. below.

Canada Steamship Lines Ltd., was charged at the Toronto Police Court, Oct. 22, with a breach of the city bylaws by permitting black smoke to be emitted from the s.s. Cayuga, for 31 minutes, while the vessel was at her dock. The case has been before the court several times and has been adjourned from time to time. It is contended by the

company that it is not bound by the city bylaws. Decision was reserved.

The Ontario Car Ferry's Co.'s car ferry steamship Ontario No. 1, which was taken off the route between Cobourg, Ont., and Rochester, N.Y., for general overhaul, has returned to service. While out of service, her place was taken by Ontario No. 2, the company's new vessel built at Toronto recently. The latter vessel is now at Polson Iron Works, Toronto, where she was built, being prepared for her winter work.

The Northern Navigation Co. has been granted supplementary letters patent under the Ontario Companies Act, amending the letters patent incorporating the company by striking out the provision that the operations of the company be carried on on the waters of Georgian Bay and that portion of Lake Huron within Ontario, and on the various arms, bays and inlets of these waters and the rivers tributary thereto; also authorizing the company to hold meetings of shareholders, etc., outside Ontario, and to fix by bylaw the quorum of directors.

The construction of the southerly extension of the exterior breakwater in Chicago harbor is announced to commence shortly. It will be of rubble mound, beginning at the southeast or outer end of the present structure and extending due south toward the vessel course for entering the harbor. To mark the location during construction, a gas buoy painted red and showing a fixed red light will be placed about 1,050 ft. south from the end of the old breakwater and on a line with the northerly face of the new city pier, in 28 ft. of water. Between this buoy and the southeast end of the present exterior breakwater, it will be extremely dangerous for vessels to pass.

Tenders were received early in October for the refloating of the Cadillac Steamship Co.'s s.s. Western Star, which was wrecked off Manitoulin Island, Sept. 24. She struck on Robertson rock, near Clapperton Island, in the north channel of Georgian Bay, and is reported to be resting in 5 ft. of water forward and in 114 ft. at the stern, and is consequently standing almost on end. The tenders were submitted on the no cure no pay plan, the vessel to be delivered to a U.S. port where there is a dry dock. Two bids were received and will be passed on to the underwriters. The bid which it is reported may be the one accepted, is for \$58,000, or 65% of the value of the vessel.

In order to utilize all of the lake vessels which are suitable for ocean traffic, during the winter when lake navigation is closed, it has been suggested that such of them as are too large to pass through the canals be cut and refitted after clearing the canals. A Lloyd's agent is reported to have stated that this is perfectly feasible for vessels of 43 ft. beam and under, that most of the vessels are strong enough for ocean service, and that the changes required would be comparatively inexpensive. This method has been followed on more than one occasion, both for taking vessels built in Great Britain to the upper lakes, and also for taking vessels which were built on the Great Lakes for operation there, to the Atlantic coast.

### British Columbia and Pacific Coast.

The Dominion Government has renewed its subsidy agreement for ten years, with the British Columbia Salvage Co., providing for the payment of \$10,000 a year for the maintenance of a wrecking and salvage plant in Pacific Coast waters.

The Vancouver Harbor and Dock Extension Co. consented recently to a judgment for foreclosure for \$53,000, due as a balance on certain lands on Lulu Island, the judgment carrying with it an allowance of four months for redemption.

The Imperial Oil Co. has deposited with the Minister of Public Works at Ottawa and at the local registry office at Vancouver, a description of site and plans for a wharf to be built in False Creek Vancouver, immediately west of Connaught Bridge.

The Vancouver Shipmasters' Association has protested against the work of reclamation being carried out on the False Creek flats, condemning it from a marine standpoint as damaging to the interests of the city as a port.

The s.s. Delhi, which was docked at Prince Rupert for examination after having been wrecked on the Alaska coast about a year ago, but which was found not to be in fit condition for repair, has been sold to Capt. Babington, Prince Rupert, for \$2,000.

The United States s.s. Mariposa ran ashore on Campbell Island, about 250 miles north of Vancouver, B.C., Oct. 8. She is reported to have slipped into deep water on the following day, and to be in such a con-

### Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during September.

ARTICLES			CANADIAN CANAL	U. S. CANAL	TOTAL
Copper.....	Eastbound	Short tons	3,368	12,751	16,119
Grain.....	"	Bushels	1,538,351	4,915,551	6,453,902
Building stone.....	"	Short tons	"	"	"
Flour.....	"	Barrels	356,440	856,662	1,213,102
Iron ore.....	"	Short tons	875,689	6,925,276	7,798,965
Pig iron.....	"	"	2,150	2,214	4,364
Lumber.....	"	M. ft. b.m.	3,371	58,410	61,781
Wheat.....	"	Bushels	10,503,477	14,970,491	25,473,968
General merchandise.....	"	Short tons	11,391	27,151	38,542
Passengers.....	"	Number	"	"	"
Coal, hard.....	Westbound	Short tons	3,150	171,441	174,591
Coal, soft.....	"	"	59,600	1,439,856	1,553,436
Flour.....	"	Barrels	"	"	"
Grain.....	"	Bushels	"	"	"
Manufactured iron.....	"	Short tons	5,020	13,367	18,387
Iron ore.....	"	"	"	"	"
Salt.....	"	Barrels	1,400	85,917	87,317
General merchandise.....	"	Short tons	34,911	167,448	202,359
Passengers.....	"	Number	1,330	1,326	2,656
Summary.					
Vessel passages.....		Number	677	2,521	3,198
Registered tonnage.....		Net	1,403,407	7,372,202	8,775,609
Freight—Eastbound.....		Short tons	1,286,465	7,741,436	9,027,901
—Westbound.....		"	1,488,881	1,888,799	3,377,680
Total freight.....		"	1,389,346	9,590,105	10,979,451



may she will probably be abandoned as a total loss. She is valued at \$350,000.

The Grand Trunk Pacific Coast Steamship Co. has discontinued its tri-weekly summer service between Seattle, Wash., Victoria, Vancouver and Prince Rupert, and has substituted a bi-weekly service. The steamships Prince Rupert and Prince John will be replaced by the Prince Rupert and Prince George, the latter being laid up.

The s.s. Delhi, which was dry docked at Prince Rupert recently for examination, will, it is stated, be abandoned entirely, as it is considered that the damage to the hull is so extensive as to make it not worth repairing her. An offer of \$1,500 has been received for her, for the sake of the machinery, which is regarded as in very poor condition.

The Union Steamship Co.'s s.s. Capilano, when half way between Cape Mudge and Savary Island, Sept. 30, sank during heavy weather, the crew being saved by taking to the boats and making Savary Island. The Capilano was built at Vancouver in 1892, and was screw driven by engine of 28 n.h.p. Her dimensions were: length, 120 ft.; breadth, 22.2 ft.; depth, 9.6 ft.; tonnage, 231 gross, 157 register.

The Vancouver Harbor Commissioners have applied to the Vancouver City Council for a permit for their scheme to reclaim the mud flats under the Granville St. bridge for industrial purposes. The work is estimated to cost \$195,000, and will be under the supervision of C.C. Worsfold, Resident Engineer, Public Works Department. It is reported that work has been commenced, a system of creosoted wood piling having been adopted.

The Union Steamship Co. is reported to be negotiating for the purchase of the whale tender Gray for freight service. It is stated that as soon as the Gray has finished removing whale products from Kyuquot and Naden Harbor, she will be chartered to the Union Steamship Co., and then sold. The Gray was formerly known as Petriana, and was built in Scotland. After going to the Pacific coast she was run in freight service to Prince Rupert, and was later purchased by Canadian North Pacific Fisheries Ltd.

The s.s. Otter, in the C.P.R. British Columbia Coast Service, when going to assist in salving the s.s. Mariposa, Oct. 9, ran ashore in the channel between Darcy and James Islands. Attempts to release the vessel were unsuccessful, as she turned turtle and was abandoned as a total loss. Her value was placed at between \$30,000 and \$40,000. She was built at Victoria, B.C., in 1900, and was screw driven by engine of 24 n.h.p. Her dimensions are: length, 128 ft.; breadth, 24.5 ft.; depth, 11 ft.; tonnage, 366 gross, 232 register.

It is announced that the second unit of the North Fraser jetty across the sandheads at New Westminster is about half finished, and that the work will be completed about the end of Feb. 1916. The lower mattress, 190 ft. wide and 2 ft. thick, has been laid in position for the entire length of fill, 710 ft., and the upper mattress, which forms a rock slope, has been laid for 1,800 ft. The complete jetty will consist of three units, and a north jetty will be built, thus forming a permanent channel which, it is expected, will require a minimum of dredging.

The river flowing westerly into the Fraser River 60 miles above Fort George, B. C., formerly known as the north fork with its south branch of the Fraser River, has been named McGregor; the creek flowing westerly into the McGregor River about 27 miles from its mouth, formerly known as the north branch of the north fork of the Fraser River, has been named Herrick, and

the creek flowing southeasterly into Herrick creek about two miles from its mouth, formerly known as Bad River, has been named James, all in honor of Capt. James Herrick McGregor, the first President of the British Columbia Surveyors Association, who joined the 16th Battalion, Canadian Expeditionary Force, and was killed in action at Ypres.

### Atlantic Ocean Tonnage for Canadian Trade.

The Minister of Public Works, Hon. Robt. Rogers, issued the following statement in Ottawa, Oct. 6: "Since Sir Robert Borden's return from London, the following additional ships have been added to the overseas transport service, plying to Canadian ports: Dunedin, Trankmere, Glenspear, Policastria, Horatius and Marquis Bacqueham. This brings the number of ships in this service up to a total of 20. These ships are for the transportation of supplies purchased by the Imperial authorities, and it is estimated that for the balance of the season over two thirds of their cargo space will be filled with Canadian agricultural products, such as hay, grain and flour. As a result of representations by the Canadian Government, an expert from the War Office is now in Canada to arrange for increased purchases of grain and flour and for the transportation of the supplies thus purchased. In addition to the above ships, a fleet for the transportation of horses, hay, etc., has been provided, seven of such remount transports having sailed from Montreal within the past two weeks.

"With regard to provision for the general commercial trade, the Imperial authorities have, during the past two months, refrained from requisitioning any ships on the Canadian routes, so that the increases made in the Imperial transport service to Canada are not additions to the transportation facilities for Canadian products. Further, the Imperial Government, when possible, is releasing, temporarily at least, Canadian liners already requisitioned. The Mount Temple, of the C.P.R. line, will in this way re-enter the commercial trade during the present week. Advices have also been received that the Kawack, Heligoland and Barenfels, ships not previously in the Canadian service, are being released to enter this service immediately. Military necessity must govern every movement made."

Manchester Liners, Ltd., is adding to its fleet a new vessel which was recently launched and named Manchester Hero. Orders have also been placed for the construction of two 13 knot vessels. It cannot be stated exactly when either of these vessels will be delivered, on account of the condition of shipbuilding in Great Britain, but it is hoped that they will be ready for service next spring. Arrangements have been made for an extension of the service to the United States, by joining with the Furness and Johnston Lines in instituting a regular service between Manchester, England, and Baltimore. This is now being operated under the name of the Furness-Johnston-Manchester Liners Joint Service, and the first vessel sailed from Baltimore, Oct. 2.

Canada Atlantic Transit Co.—The following directors were elected at the annual meeting recently: E.J. Chamberlin, President; H.G. Kelley, Vice President; Frank Scott, Secretary-Treasurer; J.E. Dalrymple and H.R. Safford.

The U. S. Engineering Department is considering the question of deepening the St. Clair River channel along the waterfront at Port Huron, Mich.

### The Suggested Suspension of the Coasting Laws.

In Canadian Railway and Marine World for October, mention was made of the rumors that the Dominion Government had consented to suspend the coasting laws, and thus allow United States lake vessels to carry grain between Canadian ports. These rumors were persistent, and it was even stated that a U.S. trade commissioner at the head of the lakes had advised the U.S. Government that the suspension had been ordered by the Dominion Government. As we then stated, our advices from Ottawa up to the date of going to press with that issue, were to the effect that the Government had no intention of suspending the coasting laws.

Since then, vessel owners and agents at the head of the lakes, interviewed by various press representatives, state that there is no necessity for the suspension as the Canadian companies are quite capable of transporting the grain from the head of the lakes to lower lake points as fast as the receiving elevators at such points can take it. They claim that the suspension would be unfair to Canadian vessels, as for the past two years rates have been low and cargoes so scarce that in some cases vessels were operated at a loss.

Additional Elevator Suggested for Montreal.—In response to various suggestions, W.G. Ross, Chairman, Montreal Harbor Commissioners, is reported to have stated that the commissioners are prepared to build a special elevator for tramp steamships as soon as conditions warrant. An elevator with capacity for 1,500,000 bush., and with conveyors to four berths would cost approximately \$1,000,000, and the construction of the four berths with the necessary facilities would cost another \$1,000,000. The interest and upkeep would cost about \$200,000 a year, and on this basis the commissioners would be out of pocket unless the receipts of the suggested elevator reached 20,000,000 bush., and to make it any success it would be entirely dependent on an ample supply of tramp steamships. It is believed that the construction of such an elevator will not be long delayed, and the commissioners are prepared to ask the Government to consider the necessity of proceeding with it as soon as conditions make it possible.

Manchester Liners, Ltd., which operates a steamship line between Manchester, England, and Canada, has paid a dividend for the financial year 1914-15, recently concluded, of 7½%, and has also paid a bonus of the same amount. In the previous year the dividend paid was 6%. The profits for the past year exceeded those of the previous year by nearly £100,000. Furness, Withy and Co. are closely associated with this company.

Ocean Freight Charges and the Rate of Exchange.—A Montreal press dispatch of Oct. 20 states that at a meeting of the council of the Montreal Board of Trade, Oct. 19, it was announced that the Shipping Federation and the C.P.R. had responded to the council's suggestion, and had agreed to a fixed rate of exchange of \$4.86 2-3, for all steamship freight charges, to go into effect during the following week.

I. Schaefer, a naturalized Austrian, who has been acting as a steamship ticket agent at Montreal for some time, and who was charged shortly after the commencement of the war with high treason in attempting to assist a number of Austrian subjects to leave Canada for active service with the enemy, is to be placed on trial a second time, the jury having disagreed, Oct. 1. The extreme penalty for the offence is death.



## Shipping Letters From the Head of the Great Lakes.

F. and W. Jones, shipping brokers, Fort William, Ont., have written as follows:

**Oct. 9.**—Arrivals of coal picked up during the past week. Eight cargoes being unloaded, all bituminous. Three were carried in United States steamships, the balance in Canadian. Three vessels are now under the rigs and four en route. Dispatch in unloading has been excellent, the docks starting on all vessels on arrival and working straight through. Car shipments to the west are still increasing and stocks are consequently being reduced, but there is no likelihood of any shortage.

Grain shipments from these ports are still on the increase, the total shipments during the week being 9,057,477 bush. of all grains, an increase of 1,500,000 bush. over last week. This was carried in 59 steamships, 32 cargoes went to Canadian ports and 27 to U. S. ports, but owing to the larger carrying capacity of the U. S. vessels more grain has been consigned to U. S. ports than to Canadian ports. Thirteen steamships are loading grain today, seven are en route light for grain and four coming with coal cargoes are lined up to take grain down. Dispatch in loading the past week has been seriously interfered with by heavy rains, and night work on Tuesday and Wednesday was practically impossible, although some houses where a boat was finishing worked through until about 10 p.m. High winds made shifting very difficult. Receipts from the west for the first four days of the week were exceedingly good but the past two days they have dropped off owing to the wet weather in the west. The weather probabilities, however, are for warmer weather and receipts should pick up again during the coming week.

**Oct. 16.**—Trade in coal at these ports brightened up considerably during the past week. Ten cargoes of bituminous coal have been unloaded. One cargo of coke and two cargoes of bituminous coal are now under the rigs, four cargoes are en route. Car shipments to the west have picked up greatly and are now considered normal, with the prospects of increasing greatly during the last half of the month. Docks are working on steamships to fullest capacity and boats are experiencing no holdup whatever. One cargo of ore went to Cleveland this week, one charter is reported to load this week.

Shipments of grain are still on the increase; those of this week are 12,712,862 bush., being 3,500,000 more than those of the previous week. This grain was carried in 69 vessels, 29 of which were billed to Buffalo and Erie side ports and 40 to Canadian points. In the same week last year shipments were 5,128,668 bush., so that the business this year is more than double that of last year. From the figures below it will be noticed that shipments exceed receipts by over 1,000,000 bush. and stocks this week are less than those of last week. Receipts from the west still continue to be of an embarrassing quantity, but the weather for the past two or three days has been decidedly more favorable and a large increase in receipts is expected. Dispatch in loading has been held up considerably on account of the lack of stocks, nearly all vessels having to wait. Stock in store at date, receipts and shipments during the week are as follows:

	Stocks.	Receipts.	Shipments.
Wheat .....	9,850,128	10,025,263	11,789,738
Oats .....	1,116,050	871,359	661,229
Barley .....	366,125	230,578	170,353
Flax .....	650,669	23,356	100,542

**Oct. 23.**—Coal receipts dropped again this week, there being only seven cargoes un-

loaded, all bituminous coal. Two steamships are now under the rigs and four are en route. Car shipments to the west have increased greatly and are steadily improving.

Grain shipments during this week were slightly below last but this by no means an indication of a falling off, as last week's shipments were far above the average. Total shipments of all grains were 12,157,027 bush., this is 555,835 less than last week. This grain was carried in 72 vessels, 20 cargoes went to Buffalo and Erie side ports and Port Huron, the balance going to Canadian ports. Grain has been coming down more freely the past week and stocks consequently have accumulated, there being 1,500,000 bush. more in store this week than last, total receipts being 13,873,681 bush. Threshing in the western provinces has been seriously delayed on account of adverse weather conditions; it is computed that little more than 5% of the crop in Alberta, 15% in Saskatchewan and 50% in Manitoba has been actually threshed, thus leaving a large percentage still to be shipped forward. The indications are that much of this will not be ready to come forward till later in the season or, possibly early in the spring. The deductions from these conditions are that the close of navigation will see a great rush forward of grain from the west, not only for lake shipments but also for vessel winter storage and still leave a large quantity for early shipment next year. Stocks in store at date, receipts and shipments during the week are as follows:—

	Stocks.	Receipts.	Shipments.
Wheat .....	10,938,208	11,949,331	10,861,251
Oats .....	1,710,672	1,514,041	919,417
Barley .....	645,067	363,183	75,241
Flax .....	396,677	47,126	301,118

## Mainly About Marine People.

**Capt. L. Jones**, master of the s.s. *Calcutta*, fell from the gangway between his vessel and the wharf, at Montreal, Oct. 17, and was drowned.

**A. T. Ross**, who died at Cornwall, Ont., Oct. 18, aged 85, had lived all his life in the locality, and for six years prior to 1895 was Superintendent of the Cornwall Canal.

**R. G. Allan**, formerly of the Allan Line Steamship Co., whose death was announced in a recent issue, left an estate valued at £328,965 11s 1d.

**Capt. C. H. Jenkin**, a well known lake mariner, and for several years commanding G.T.R. car ferries, died at Detroit, Mich., recently after a long illness.

**Sir Hugh Montagu Allan**, of Montreal, formerly of the Allan Line Steamship Co., is now President of the Canadian Pensions and Claims Board, which has its offices at Folkestone, Eng., where he is living at present.

**J. A. Martin**, heretofore Agent, Allan Line Steamship Co., Glasgow, Scotland, has been appointed Assistant Manager, Canadian Pacific Ocean Services, Ltd., with office at Royal Liver Building, Liverpool, Eng.

**Sir Thomas B. Bowring**, head of the firm of C. T. Bowring and Co., shipowners, etc., of Liverpool, London, Eng., and St. John's Nfld., died in England, Oct. 19. He was born at St. John's in 1847 and was knighted in 1913.

Lady Allan, wife of Sir Montagu Allan, formerly of the Allan Line Steamship Co., is reported to have entirely recovered from the serious injuries she sustained when the *Lusitania* was sunk by a German submarine in May.

**W. T. Payne**, Manager, Trans-Pacific Steamships Service, C.P.R., Yokohama, Japan, was

a passenger, with his family, on the C.P.R. s.s. *Monteagle*, which arrived at Vancouver, B.C., from the Orient, Oct. 6. He proceeded to Montreal the same day.

**Major Adolphe V. Roy**, M. Can. Soc. C.E., graduate of Ecole Central, Paris, France, of the 22nd French Canadian Regiment, has been killed at the front. He was Vice President of the Sincennes-McNaughton Line, Ltd., forwarders and tug owners, and was for several years one of the Montreal Harbor Commissioners.

**Capt. Main** and the officers and crew of the Allan Line s.s. *Hesperian* were presented with the awards made by the War Risks Association, by the President of the Liverpool Board of Trade, at Liverpool, Eng., Oct. 9. The captain received 50 guineas and the men one month's pay and one month holiday with pay, in recognition of their efforts to navigate the vessel to Queenstown, Ireland, after she had been damaged by a torpedo or mine. The attempt made to reach Queenstown was unsuccessful.

## Telegraph, Telephone and Cable Matters.

The Western Union Telegraph Co. is building three additional houses at Bay Robert, Nfld., for the married men of its staff there.

The Montreal Telegraph Co. paid its usual quarterly dividend of 2%, and its usual annual bonus of 1%, Oct. 15.

**G. D. Perry**, General Manager, and **C. E. Davis**, Traffic Manager, Great North Western Telegraph Co., Toronto, are on a trip of inspection through the west. While in Saskatoon, Sask., Oct. 6, they supervised the transfer of the company's office from 22nd St. East to 2nd Ave.

**H. Hulatt**, heretofore Commercial and Traffic Superintendent in charge of telegraph lines west of Fort William, Ont., and also Superintendent of Time Service, Grand Trunk Pacific Ry., Winnipeg, has been appointed Manager of Telegraphs, G.T.R. and G.T. Pacific Ry., Montreal, vice A. B. Smith, who has resigned on account of ill health.

**John Trotter**, who died at Victoria, B.C., Oct. 4, following an operation, was formerly in the C.P.R. Telegraphs service, and was connected with the construction of the telegraph line along the railway's Crowsnest Pass Branch, and was later transferred to line work on Vancouver Island. He retired about four years ago.

**G. D. Perry**, General Manager, Great North Western Telegraph Co., is reported to have stated in Vancouver, Oct. 16, that his company purposes stringing a double copper line between Montreal and Vancouver for commercial business, and that this will take about 6,000 miles of wire and cost about \$300,000.

The work of laying the Commercial Cable Co.'s underground cable from the submarine cable terminal at Cuckold's Cove to its new office building in St. John's, Nfld., has been completed. The office building is approaching completion, and it is expected to be finished by the end of the year, when the operation of the cables will be transferred from Cuckold's Cove to St. John's.

The U.S. Navy Department has announced the successful accomplishment of wireless telephony between the naval stations at Arlington, Va., and Mare Island, Cal., about 2,500 miles. A little later it was announced that the American Telegraph and Telephone Co. had carried on a conversation by wireless between New York and the Hawaiian Islands, nearly double the distance.

The Great North Western Telegraph Co.'s annual meeting was held at Toronto, Sept.



The directors for the current year are: Z.A. Lash, President; Adam Brown, Vice President; G.D. Perry, General Manager; Jas. Bradley Hon. J.K. Kerr, Amosius Jarvis, F.D. Hayes, T.B. Hanna and R.P. Ormsby. The Secretary and Auditor is A.C. McConnell, and the Treasurer D.E. Henry.

C.P.R. telegraph operators have contributed over 100 men for overseas service, and are making arrangements whereby each man remaining at home contributes one day's pay a month, in order to provide regular and reasonable relief for dependent families and to relieve the general patriotic fund. The wife of each operator on active service will receive \$20 a month, with suitable allowances for children.

### Transportation Conventions in 1915-16.

Nov. 17.—American Railway Association, Chicago, Ill.  
 Nov. 17-19.—International Association of Ticket Agents, New Orleans, La.  
 Dec. 1-11.—American Society of Mechanical Engineers, New York, N.Y.  
 Dec. 12.—American Society of Transportation and Car Accounting Officers, St. Louis, Mo.  
 Jan. 18-20, 1916.—American Wood Preservers' Association, Chicago, Ill.  
 March 2-23, 1916.—American Railway Engineering Association, Atlantic City, N.J.  
 May, 1916.—International Railway Fuel Association, Chicago, Ill.  
 May 2-5, 1916.—Air Brake Association, Atlanta, Ga.  
 May 19, 1916.—Association of Railway Claim Agents, Atlantic City, N.J.  
 June 20-22, 1916.—Association of Railway Telegraph Superintendents, St. Paul, Minn.  
 June 20-23, 1916.—American Association of Freight Agents, Cincinnati, Ohio.  
 June 21, 1916.—Train Despatchers' Association of America, Toronto.  
 June 21, 1916.—American Association of General Baggage Agents, Boston, Mass.  
 June 28, 1916.—Association of American Railway Accounting Officers, Detroit, Mich.  
 August, 1916.—International Railroad Blacksmiths' Association, Chicago, Ill.  
 September, 1916.—Master Car and Locomotive Painters' Association of United States and Canada, Wilmington, Del.  
 September, 1916.—Railway Signal Association, Mackinac Island, Mich.  
 Sept. 19-22, 1916.—Roadmasters and Maintenance of Way Association, Chicago, Ill.

The Panama Canal has, it is officially announced, been closed for the remainder of the year, owing to landslides in the Culebra Cut blocking the passage. It is stated that the canal will probably not be opened again until all danger of landslides has been permanently removed.

### Transportation Associations, Clubs, Etc.

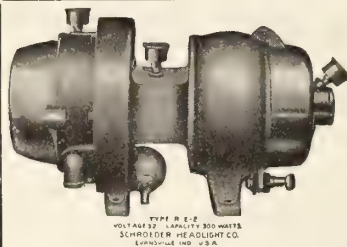
The names of persons given below are those of the secretaries unless otherwise stated:  
 Canadian Car Service Bureau—J. Reilly, Manager, 401 St. Nicholas Building, Montreal.  
 Canadian Electric Railway Association—Acton Burrows, 70 Bond Street, Toronto.  
 Canadian Freight Association (Eastern lines)—G. C. Ransom, Canadian Express Building, Montreal.  
 Canadian Freight Association (Western lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.  
 Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday each month, 8.30 p.m., except June, July, and August.  
 Canadian Society of Civil Engineers—C. H. McLeod, 176 Mansfield St., Montreal.  
 Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.  
 Central Railway and Engineering Club of Canada—C. L. Worth, 409 Union Station, Toronto. Meetings at Toronto, 3rd Tuesday each month, except June, July, and August.  
 Dominion Marine Association—F. King, Council Kingston, Ont.  
 Eastern Canadian Passenger Association—G.

H. Webster, 54 Beaver Hall Hill, Montreal.  
 Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.  
 Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.  
 Express Traffic Association of Canada—W. H. Burr, Chairman, Toronto.  
 Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.  
 Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.  
 International Water Lines Passenger Association—M. R. Nelson, New York.  
 Niagara Frontier Summer Rate Committee—James Morrison, Montreal.  
 Nova Scotia Society of Engineers—A. R. McCleave, Halifax, N.S.  
 Quebec Transportation Club—A. F. Dion, Quebec.  
 Ship Masters' Association of Canada—Capt. E. Wells, 45 St. John Street, Halifax, N.S.  
 Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.  
 Twin Cities Local Freight Agents' Association—E. J. Travers, Fort William, Ont.  
 Western Canada Railway Club—Louis Kon, Box 1707, Winnipeg. Meetings at Winnipeg, 2nd Monday each month, except June, July, and August.

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Prime Metals for the manufacture of Nickel Steel, German Silver, Anodes, and all remelting purposes. Our Nickel is produced as rods, sheets, strip stock, wire, and tubes.

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This cell is already in use by over 30 railroads in the United States and Canada, and is giving satisfactory service in every instance.

The construction is simple, but rugged.

The copper oxide element is unique in that the copper oxide is used in the loose, rather than in the compressed state.

This allows a free circulation of the electrolyte and a constant internal resistance.

The perforated metal container prevents a short circuit with the zinc element.

The element is self oiling, which means that the possibility of failure due to lack of oil is obviated.

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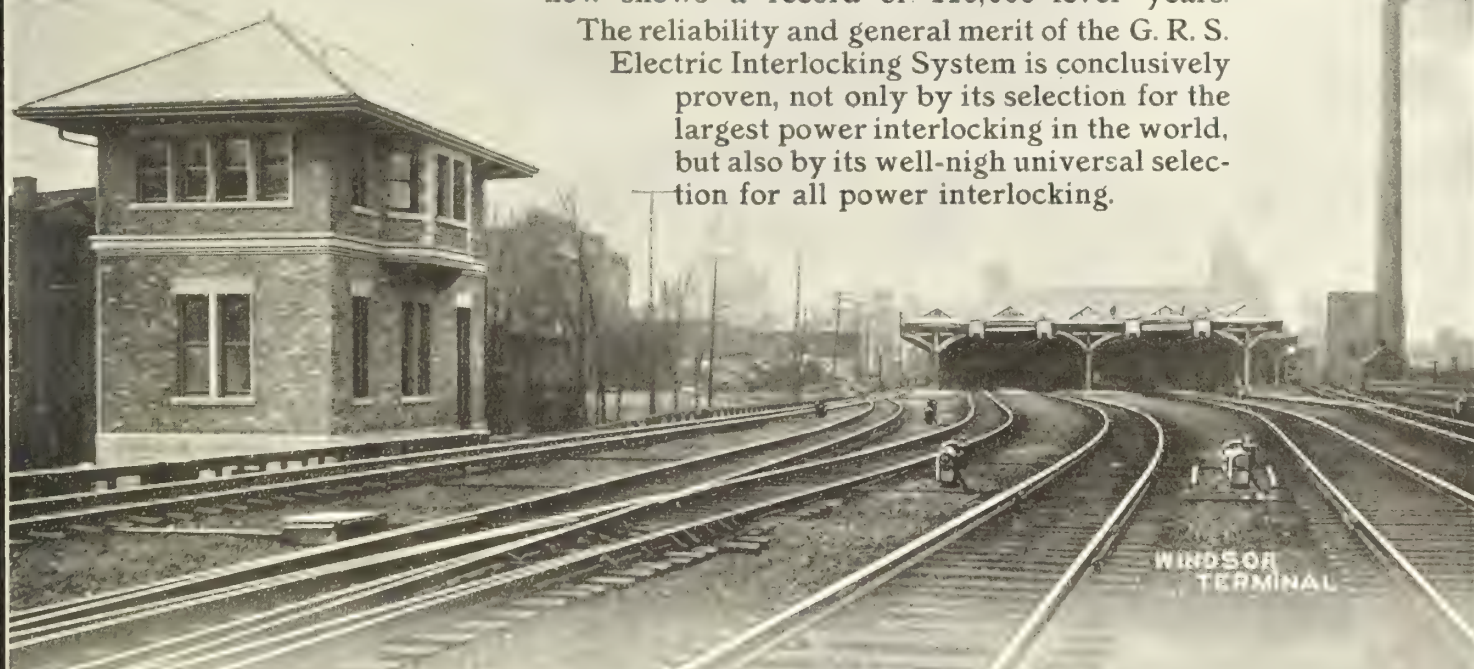
FIRST—The means provided to check the correspondence of movement between lever and the switch, signal or other functions controlled by it.

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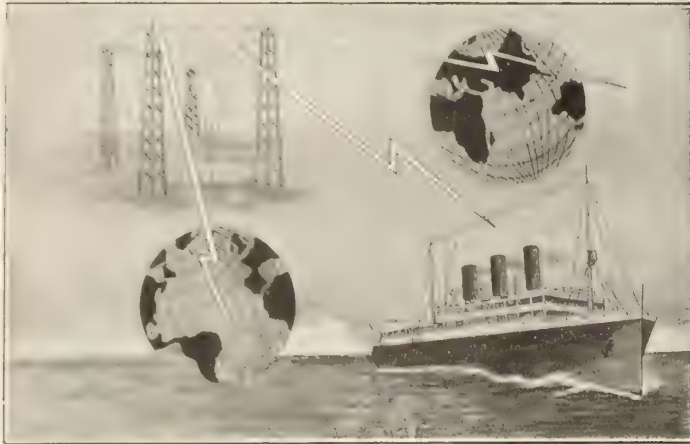
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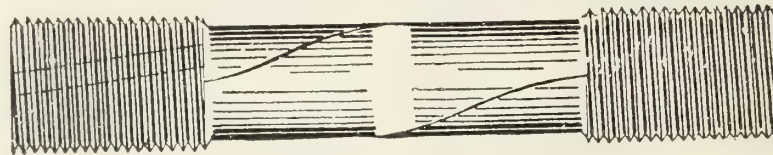
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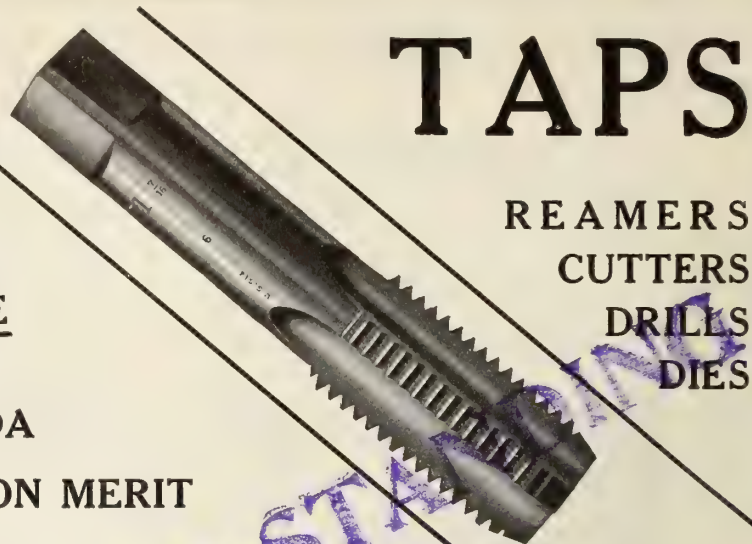
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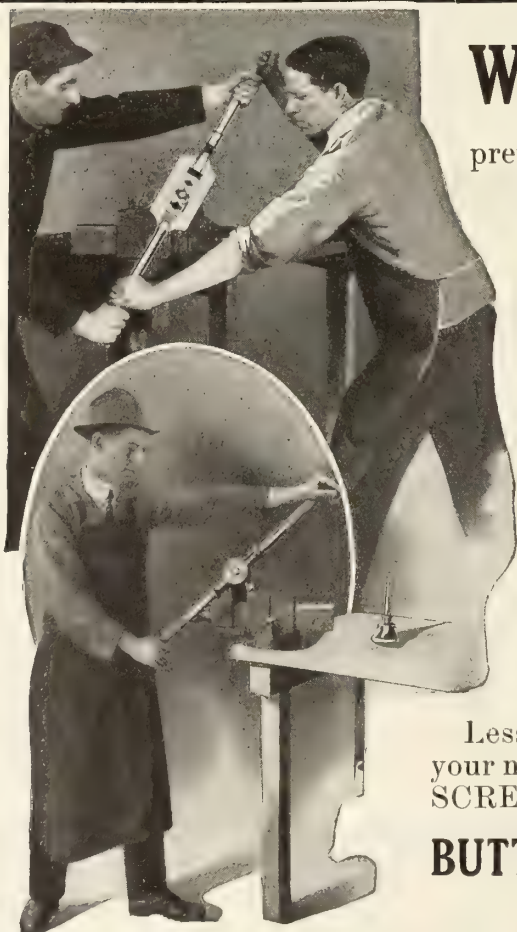
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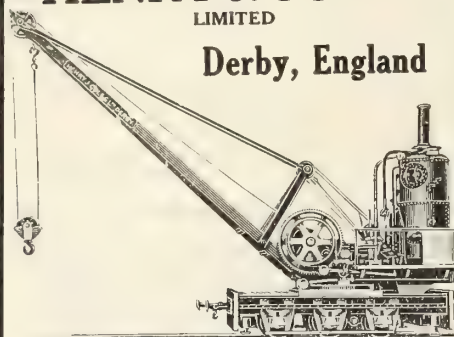
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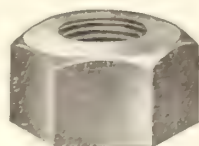
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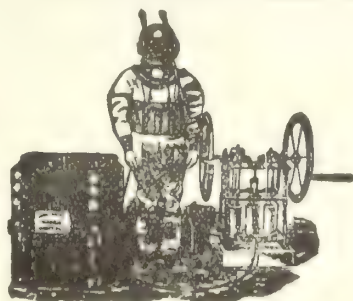
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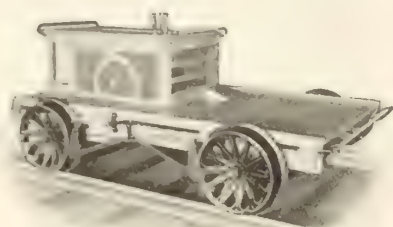
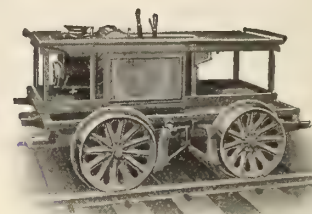
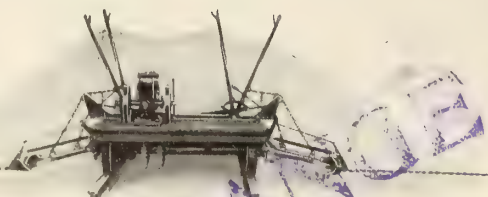
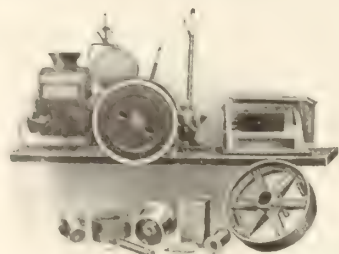
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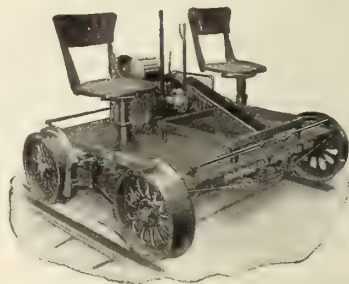


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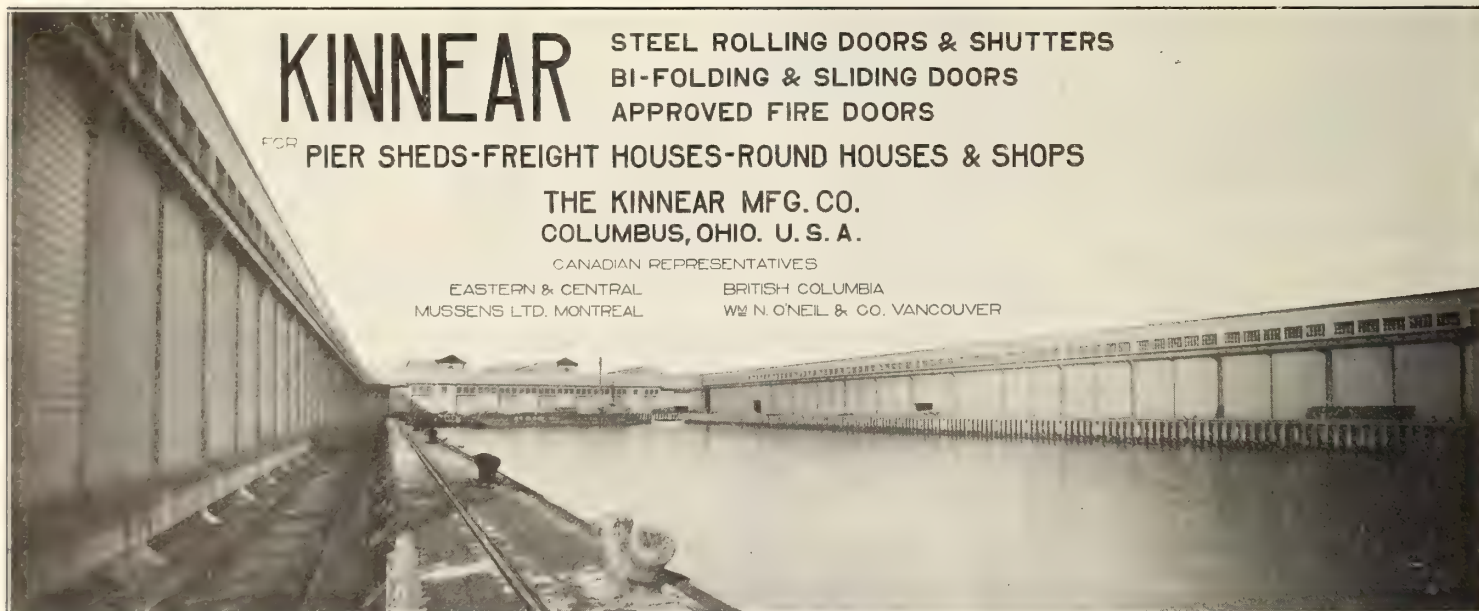
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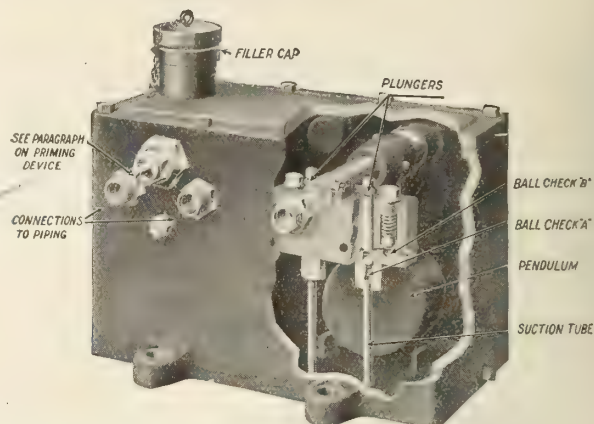
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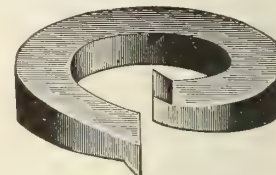
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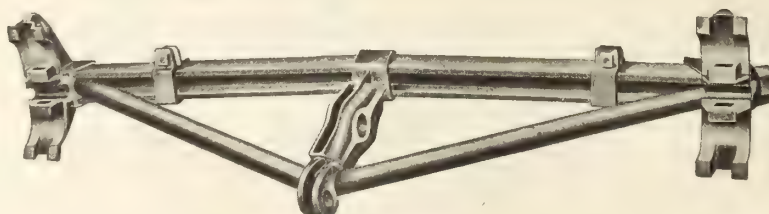
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## Buffalo Brake Beam Company

BUFFALO BEAMS ARE BEST BEAMS

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Canadian Works: HAMILTON, ONT.

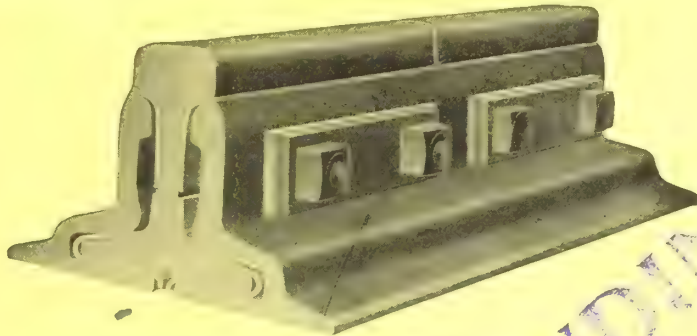
Brake Beams for all Classes of Cars, Locomotives and Electric Equipment



# The Rail Joint Company of Canada Limited

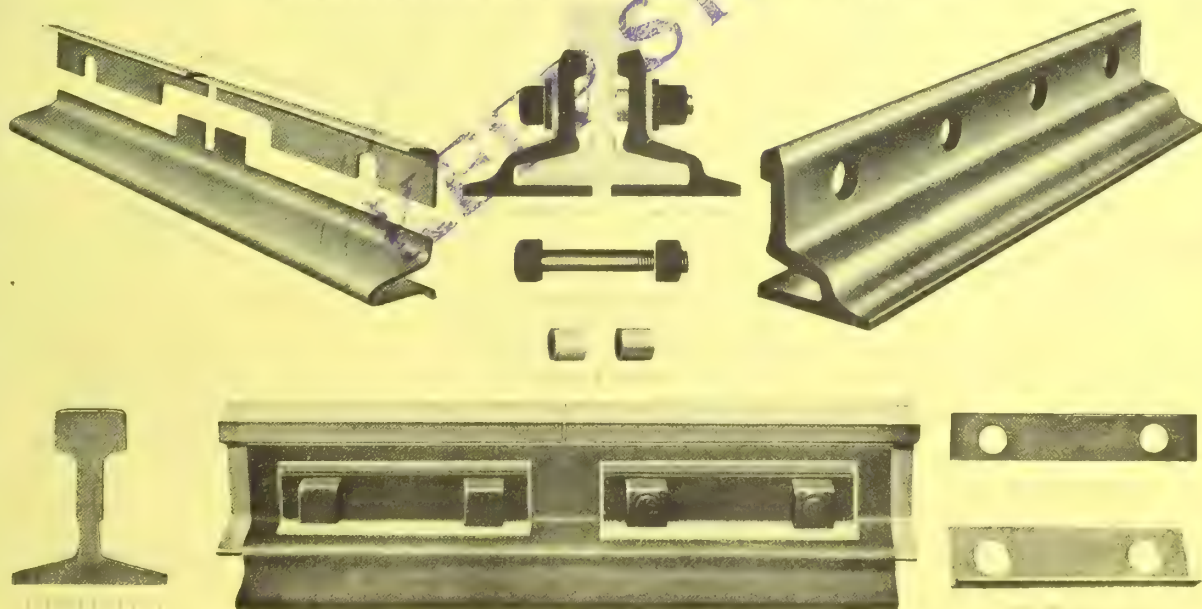
606 McGill Bldg., MONTREAL, CANADA

Makers of Base-Supported and One Hundred Per Cent. Rail Joints for Standard, Girder, and Special Rail Sections. Also Joints for Frogs and Switches; Insulated Rail Joints, and Step or Compromise Rail Joints. Patented in Canada and the United States. Catalogue on Request.



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# BERTRAM MACHINE TOOLS



## 42-inch Vertical Boring and Turning Mill

(NILES TYPE)

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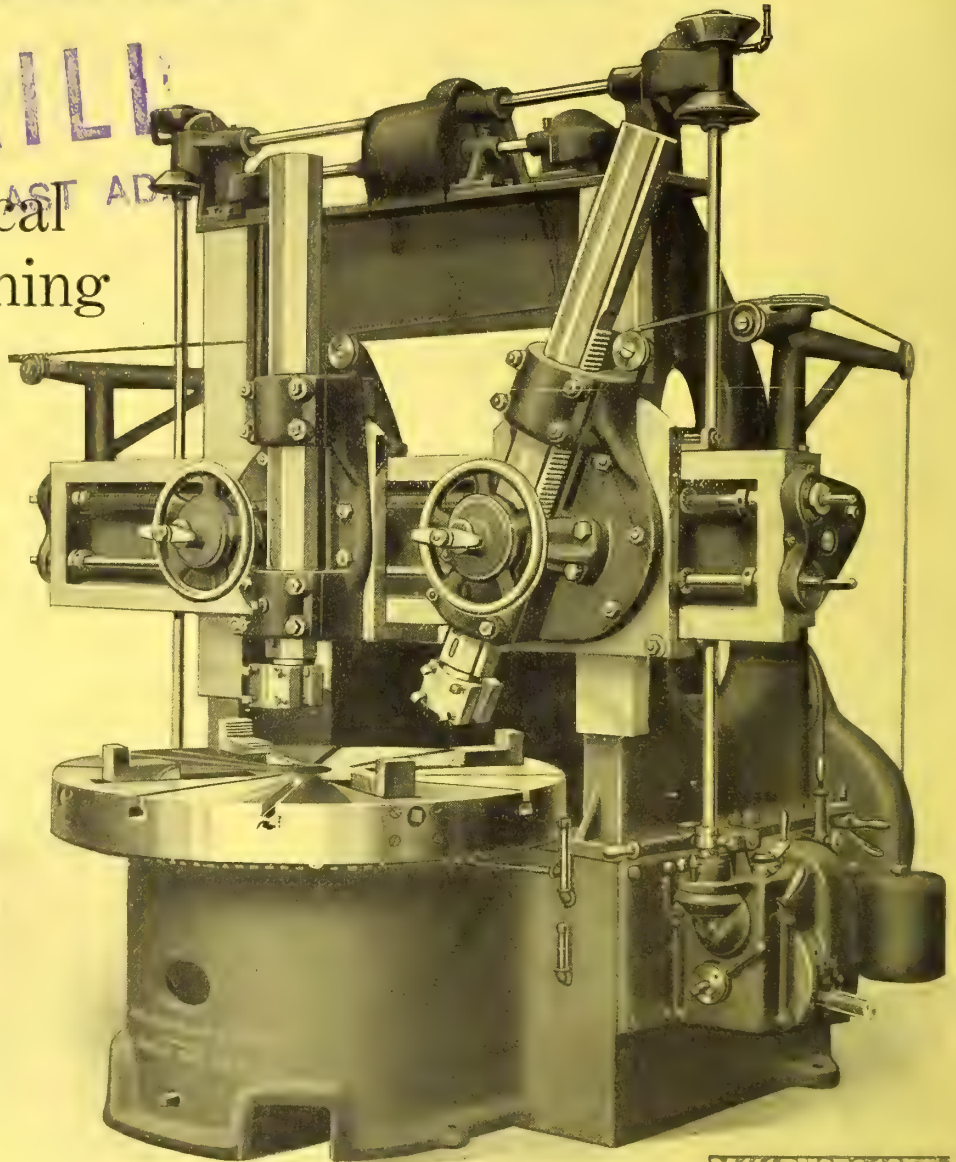
Motor Driven Through  
Speed Box.

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Built in Sizes From  
42-inch to 100-inch  
Swing.

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*Drop us a line for  
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particulars.*



Mill PHOTO 1057

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609 Bank of Ottawa Bldg.

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# Canadian Railway AND Marine World

ESTABLISHED 1898.

Number 214

TORONTO, CANADA, DECEMBER, 1915

Subscription Rates, Page 473



## Lathes and Attachments

*for the manufacture of*

This Equipment is  
all New, Modern  
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Write or wire our near-  
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EARLY DELIVERY

**6", 8"  
and  
9.2  
High  
Explosive  
Shells**

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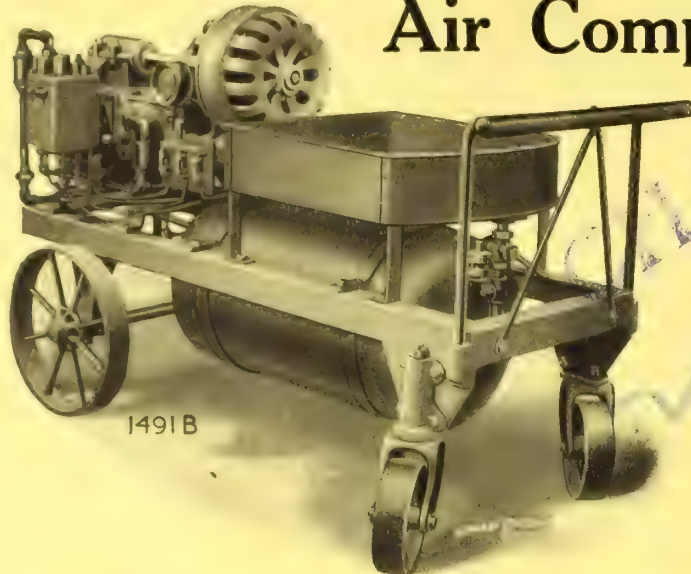
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# National Portable Motor-Driven Air Compressors



Built in capacities ranging from 11 to 300 cu. ft. of free air per minute.

## Twenty-Five Types to Select From

These outfits will be found most efficient and economical where floor space is limited, or the nature of the work requires that a supply of air be delivered in different places and under constantly changing conditions, because they can be easily moved from place to place—they eliminate the necessity of extensive piping.

*Catalogue E-400 illustrates and describes these outfits. — Send for a copy to-day.*

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“The Canadian Pacific own and operate a line of palatial hotels along the Railway from Atlantic to Pacific, thus affording their patrons every possible comfort.”

Those contemplating a trip will receive full details and literature on application to any C. P. R. agent, or write

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Asst. Dist. Pass'r. Agent, Toronto.

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# The Steel Company of Canada, Limited

## HAMILTON, CANADA

### Special Steel Marine Forgings

When forgings are required to stand the strain of rough weather, and to prove themselves reliable and dependable, write us for particulars and prices.

We have the facilities for the production of heavy steel forgings of all kinds, including:

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Cam Forgings

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Piston Heads

Piston Rods

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**Stern Frame of Steamship Hamonic**

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Fabrikoid is a strong, closely-woven fabric, coated with a tough, elastic material that is impervious to water. It will not crack and peel like the ordinary so-called "all leather" upholstery. It comes in a number of different colors and shades and is grained to look like the finest leather.

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**Fabrikoid is ideal for car curtains.**



Let us send you a sample of Fabrikoid. Be your own judge as to its quality—and adaptability for passenger car service.

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## One Testimonial Is Worth a Hundred Arguments

A short time ago, a high official of an important railroad said that he could not understand why any single-track road would consider any other system than the one (A P B) that he had installed on his road, as it was giving excellent satisfaction.

Since its introduction in 1911, twenty-one railroads have made A P B installations—a convincing fact that the Absolute Permissive Block is the preferred system.

### *Here are some of the reasons:*

Block for opposing movements is from SIDING to SIDING.

Block for following movements is from SIGNAL to SIGNAL.

Maximum protection at meeting and passing points.

Reduction of more than 30 per cent in the minimum distance between following trains running under clear signals.

The display of a caution indication for every stop indication.

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Signals afford a check on dispatchers' orders; also serve as a reminder at scheduled meeting and passing points.

Owing to the protection against opposing trains, so-called "tonnage signals" may be used

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Signals are restored to normal position as soon as block is clear, regardless of any sequence of movements.

Flexibility in providing for:

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(b) Absolute or permissive blocking for following movements, depending only upon the signal aspects and rules.

Minimum number of signal appliances required.

Minimum number of line wires required.

*"Safety First"*

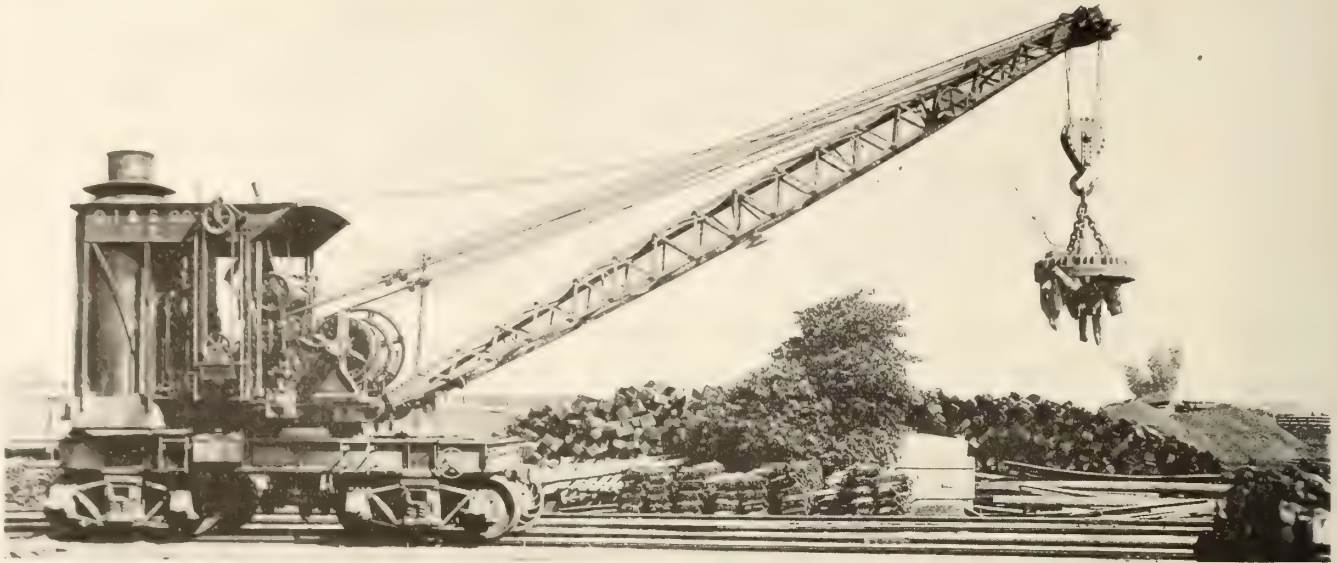
**GENERAL RAILWAY SIGNAL COMPANY**  
OF CANADA LIMITED



Office and Works, Lachine, Quebec

Branch Office, Winnipeg, Manitoba





Why employ 20 to 40 men to handle your material? A

## BROWNHOIST Locomotive Crane

will do the same amount of work with a decided saving to you. Its cost, including 6% interest on investment, depreciation, and operating costs, is only \$6.00 to \$10.00 per day. It is one man operated, powerful, quick-acting, and built to withstand hard and continuous service. Records prove this.

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**RAILROADS** all over the country are realizing more and more the advantage and economy of having a Brownhoist Locomotive Crane on the job, because it is always ready to work in case of emergency. A Brownhoist Crane can be relied upon. One road uses thirty of them.

INVESTIGATE TO-DAY. Catalogue I shows  
how and where some of these cranes are used.

**THE BROWN HOISTING MACHINERY CO.**  
**CLEVELAND, OHIO**

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## Canadian Government Railways

**Operate Over 4,000 Miles of Railway**

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Maritime Express, Daily except  
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Connection for St. John, Prince Edward  
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**THROUGH  
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The National  
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A NEW train via a NEW route  
through a NEW country.

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HAVE NO EQUAL IN  
QUALITY, EFFICIENCY AND ECONOMY

SOLE MANUFACTURERS OF  
Celebrated Galena Coach, Engine and Car Oils  
*LUBRICATION ON A GUARANTEED BASIS*

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***ELECTRIC RAILWAY LUBRICATION  
A SPECIALTY***

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Perfection Valve and Signal Oils

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*TESTS AND CORRESPONDENCE SOLICITED*

**Galena Signal Oil Company**

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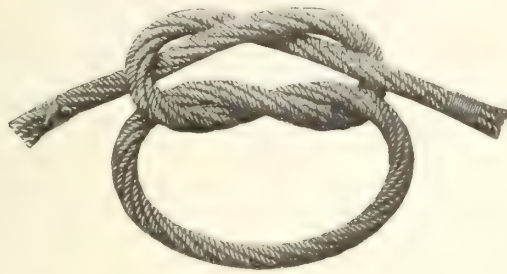
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Canadian Sales Office — 603 Shaughnessy Bldg., Montreal, Que.



This Illustration Shows

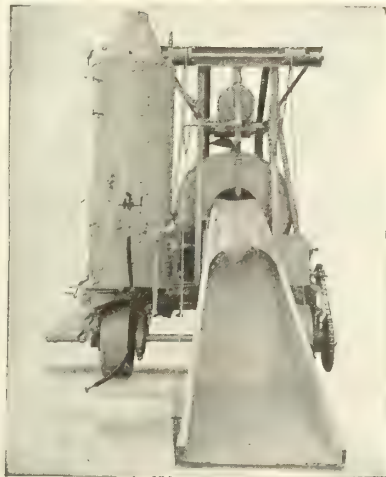
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Which differs from old style wire rope because each strand is separately served with fibrous material. Replaces manilla for stevedoring and other hoisting.

Stocks carried in  
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*"The Machine with all the Good Features"*

WHEN deciding upon a special concrete plant you should avail yourself of all the experience you can. We will be pleased to submit designs of a plant to take care of your special requirements if you will send full particulars relative to the work to be undertaken.

*Catalogue upon request*

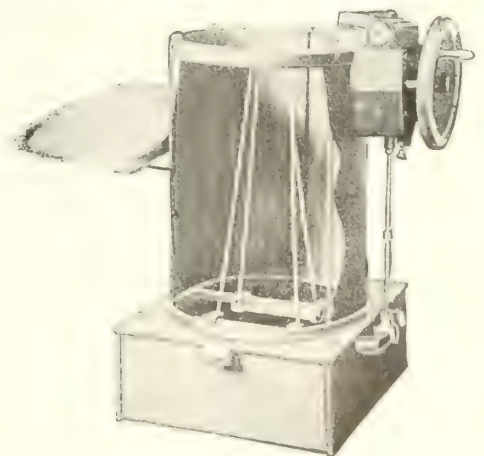
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An Inexpensive Machine for  
**Cleaning and Counting Cement Bags**  
Saves Cement that is ordinarily lost.

From one to two barrels of cement are saved out of every thousand bags.

When you return bags only partially cleaned, you not only lose the cement but pay freight on it as well.

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HEAD OFFICE  
**MONTREAL**





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is equipped with triple nickel-plated polished reflector of special parabolic design which centralizes the rays of a concentrated filament Mazda bulb perfectly focused, throwing a straight, strong beam of light down the track, far ahead of the car.

Extremely light—weighing three pounds less than any other Headlight.

No sacrifice has been made to attain this lightness of weight for the McLAIN No. 25 is as strong as any Headlight made, and has an illuminating power in excess of other Headlights employing an incandescent globe.

Has extended dash—Dust and waterproof.

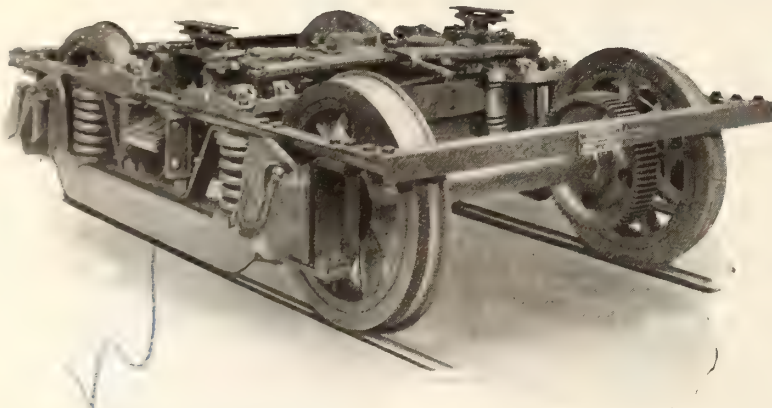
Guaranteed to give good service.

Write for booklet and prices.

**The Trolley Supply Co.**  
Canton, Ohio

## Canadian Baldwin Electric Trucks

### INTERURBAN SERVICE



Canadian Baldwin Trucks, Class 84-30-AA, built for Lake Erie and Northern Ry., Ontario.

The truck illustrated is designed for high speed on electric railways, and has a rated carrying capacity of 30,000 pounds on the centre plate.

It has frictional side bearings and is of the equalized pedestal type.

Canadian Baldwin trucks, solve the problem of minimum weight, economical maintenance, simple construction, noiseless operation and easy riding.

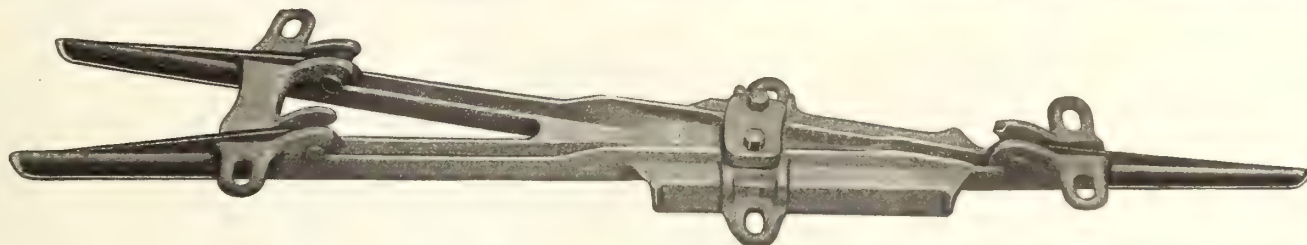
There is comfort in riding on roads where Canadian Baldwin Trucks are used.

*Manufactured in Canada by*

**Canadian Locomotive Company, Limited**  
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# A Standard Design With O-B Improvements



## Type E High-Speed Trolley Frog

Made along the general lines of the standard Dunne or Detroit design, but equipped with 6 inch renewable bronze Cam Tips. These tips in shorter length have proved a decided success on Type D Frog and other devices.

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Small number of parts and rugged design mean ease of installation and long life.

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**THE OHIO BRASS COMPANY, Mansfield, Ohio, U.S.A.**

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## OTIS DUMP CARS

— PATENTED —

—PAMPHLET No. 16 TELLS ABOUT THEM—

Always Ready For  
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Simplest, Safest and  
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Dumps Clear of the  
Rail



THE STANDARD COAL CAR ON CANADA'S LEADING RAILROADS.

Built in Any Size  
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Thousands in Use

THE MOST PRACTICAL CAR FOR ALL BULK FREIGHT.  
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# Heavier Trains—Less Coal and Water Per Trip



PACIFIC TYPE LOCOMOTIVE — INTERCOLONIAL RAILWAY.

Total weight of engine, 243,500 pounds; weight on drivers, 154,000 pounds; diameter of drivers, 73 inches; boiler pressure, 180 pounds; cylinders, 23½ x 28 inches; maximum tractive power, 32,400 pounds.

On a 185 mile run at an average speed of 40 miles per hour, these new Pacific type locomotives handle 10 cars and consume 12,884 pounds of coal and 9,750 gallons of water per trip.

Pacific type locomotives built five years ago, handled 9 cars on this same run at the same speed, but consumed 17,620 pounds of coal and 14,250 gallons of water per trip.

This is a saving of 26.9 per cent. in coal and 31.6 per cent. in water, with one extra car.

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*Manufacturers of*

MARINE, RAILWAY AND GENERAL ENGINEERING FORGINGS OF ALL SHAPES AND UP TO 40 TONS IN WEIGHT, MADE FROM BEST ORDINARY OR HARMET FLUID COMPRESSED OPEN-HEARTH STEEL. OUR FORGE IS EQUIPPED WITH THE MOST MODERN STEAM HYDRAULIC PRESSES.

*RAILWAY TRACK MATERIAL, fish plate, tie plate, track bolts, spikes, tee rails—12 to 40 lbs. per yard.*

ROLLED STEEL FOR CAR BUILDERS' USE: Spring, machinery, tire, angle, and merchant bar steel, bright compressed shafting, rivets, tank plate—12-gauge up to 1" and 50" wide cold twisted steel bars for reinforced concrete work.

ALSO MINERS AND SHIPPERS OF THE CELEBRATED "OLD SYDNEY" COAL.  
HIGH CALIFORIC VALUE—LOW ASH—UNEXCELLED FOR STEAM-RAISING PURPOSES.  
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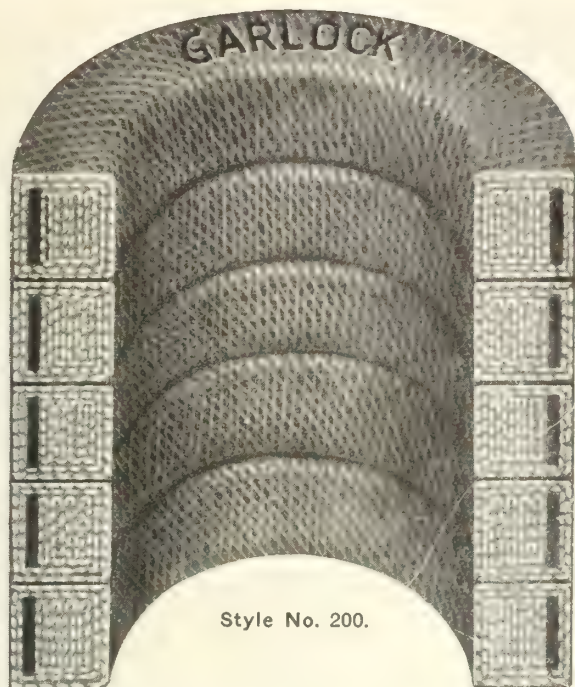
ENQUIRIES SOLICITED

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Every pound of our high pressure packing carries with it the Garlock guarantee of satisfactory and economical service.

We will promptly replace or refund the cost of any of our packings which may prove unsatisfactory to our customers.

### THE GARLOCK PACKING COMPANY

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## Good Hunting

on Canadian Northern Railway  
Lines for Moose and Deer

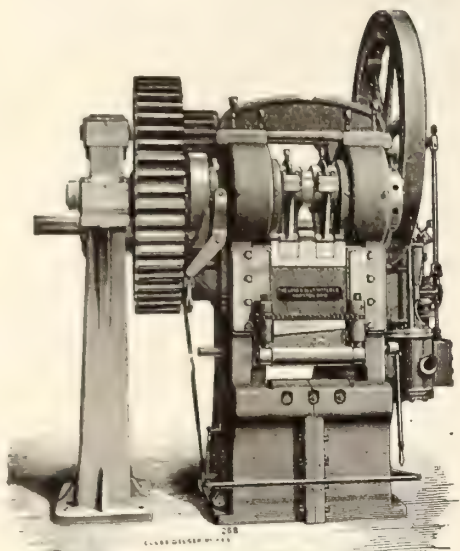
North of Quebec, in Central Ontario and North of Parry Sound. Also along the south shore of Nova Scotia.

Further particulars are obtainable in our booklet, "Where to Fish and Hunt," or from the General Passenger Departments, 68 King Street East, Toronto, Ontario; 226 St. James Street, Montreal, Quebec; and 123 Hollis Street, Halifax, N.S.





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Gate Shear—Steam-Driven

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Riveting Machines

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For 50 years we've made files only. To-day we make sixty million each year. From raw steel to finished file we supervise every step.

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To cut filing cost—replace all half-worn files. At that point they lose efficiency. They require more time and more effort to remove less stock less accurately. You save money by using more files.

What you save in time, labor and money more than pays for the extra files.

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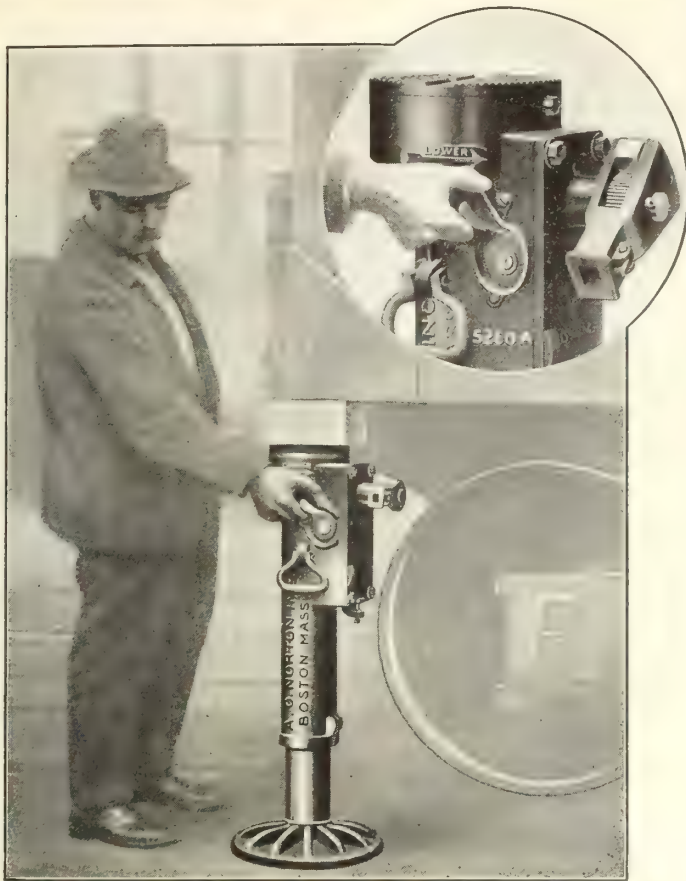
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"File Philosophy"—the first and only handbook on files. Send for your free copy now.





## Don't Pump Your Jack Down

*Lower the Load by "Pressing the Button"*

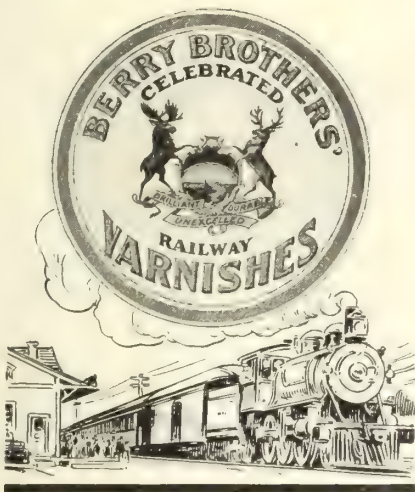
## THE NORTON SELF LOWERING JACK

is absolutely Safe and will do your work **Quicker** and **Easier** than you have ever done it before.

Send for Illustrated Catalogue No. 28

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BERRY BROTHERS' VARNISHES have given over half a century's satisfaction to users. Their rich tone and wonderful wear resisting qualities have demonstrated their superiority wherever used.

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(INCORPORATED)  
World's Largest Varnish Makers

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ONTARIO





# Pintsch Mantle Light

No other system of car lighting gives clean, safe and efficient light without intricate mechanism, subject to defects and failures. Pintsch Mantle Light is the only absolutely dependable method of lighting railway cars.

## The Safety Car Heating and Lighting Company

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718 TRANSPORTATION BUILDING, MONTREAL



## Excellence in Railway Service

is expressed in what the

### Grand Trunk System

is offering the Travelling Public of Canada.

UNEXCELLED ROAD BED  
SUPERB DINING CAR SERVICE  
COURTEOUS ATTENTION  
MODERN EQUIPMENT

The Grand Trunk System reaches all trade centres in Eastern Canada, and is now a large factor in Western Canada traffic through the Grand Trunk Pacific Railway, recently completed to the Pacific coast.

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Passenger Traffic Manager,  
Montreal, Que.

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Assistant Passenger Traffic Manager,  
Montreal, Que.





10' 0" diam. 12' 0" Scotch marine boiler for M. Beatty & Sons, Welland, Ont. This boiler was built for 125 lbs. working pressure; has one steam dome 36 inch diameter by 6' 0" long, 172 tubes 3" x 9' 4" long; two Adamson Joint furnaces and smoke box.

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**Engineers and  
Boilermakers**

Dredges, Hydraulic and Dipper  
Type; Steel Steamers, full Canal  
Size; Tugs, Barges and Scows

*Marine Engines and Boilers,  
all Sizes*

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## 450 Railroad Shops in the United States and Canada Use Thermit



This comprises practically all the shops of importance in North America, and it can be said without exaggeration that the list of railroads using Thermit includes practically every system from the small road having only three or four locomotives to the largest system in the world having many thousand locomotives.

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Remember that the greatest railway systems in the world use hundreds of thousands of pounds of Thermit. They do not use it for any reason except that it "delivers the goods" and has proven itself a profitable investment.

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All Thermit materials and appliances are manufactured in the United States and Canada

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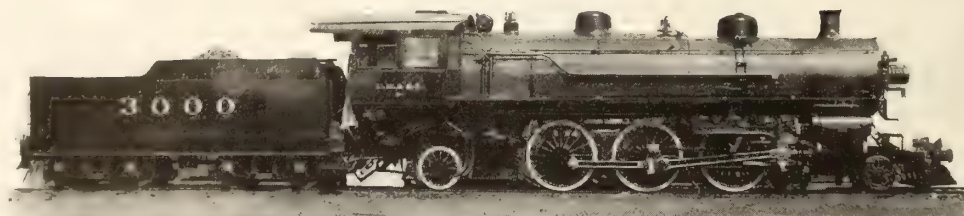
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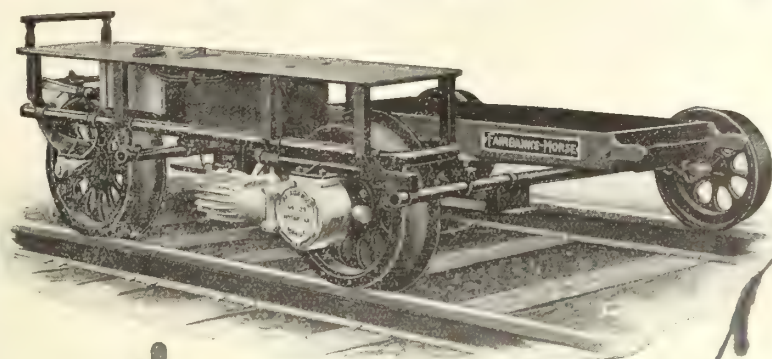
Every time an engine failure takes place it means a large expense in dollars to the railroad company in time lost, impairment of service, and cost to send another engine to the rescue. Every time a locomotive goes to shop for repairs, it represents many thousands of dollars invested capital which is earning no revenue.

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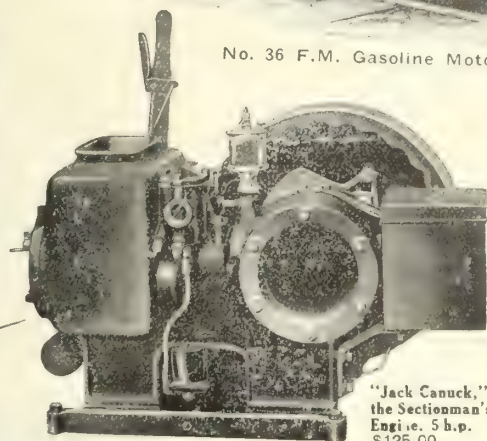
keeping the boiler tubes and sheets free from incrustation, the engine may be kept in service longer between boiler washings, and the period between shoppings for repairs of this character will be much longer. There are also great savings in fuel and lubricating oil, and the engine will always be in condition to haul full tonnage.

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"Jack Canuck,"  
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Are made in many different styles to suit all railway conditions.

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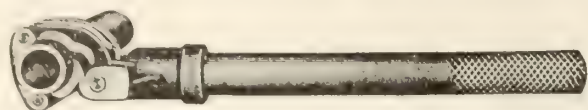
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# The Parmelee Pipe Wrench "The Toothless Wonder"



## PRICE LIST C

Length Handle	Set No.	Pipe Handled	Set Complete	Extra Handle	Extra Girths
10 in.	1	1, 1 1/2, 2, 3 in.	\$5.00	\$2.25	2, 1 1/2, 2 in. \$ .75
15 in.	2	1, 1 1/2, 2, 3 in.	7.50	2.50	1 1/2, 2 in. 1.00
25 in.	3	1 1/2, 2, 3 in.	7.50	3.00	2, 3 in. 1.25

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DESIGNED ESPECIALLY to handle pipes spaced closely as in coil work. No. 2 1/2 wrench illustrated requires but three-quarter inch space between pipes.

POSITIVE GRIP instantly taken. Operates without lost motion in stroke of handle. Can be locked or released easily in any position on the pipe.

RATCHET-LIKE ACTION. Successive grips can be taken without having to hold the wrench on the pipe. By a slight twist of the handle, which is round and knurled, the wrench is locked in any position.

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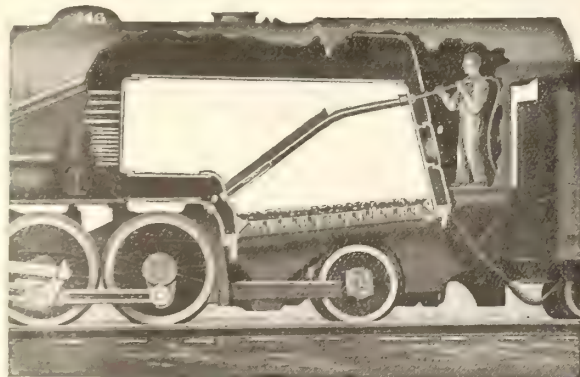
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Lagonda Arch Tube Cleaner.



Lagonda Cleaner Removing Scale from Arch Tubes.

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Scale forms in the Water Arch Tubes of Locomotives, and it must be removed, as Government Inspection requires that these tubes be absolutely clean.

The Lagonda Arch Tube Cleaner will remove these scale deposits easily and quickly. They are built for all sizes of tubes and can be driven by either water, air or steam. Send for Catalogue W-1 describing the construction and operation of these Cleaners.

Other Lagonda Boiler Room Specialties are described in our General Catalogue L-8. Send for Copy.

## Babcock and Wilcox, Limited

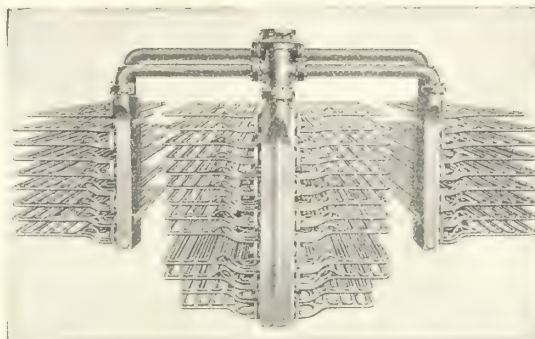
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2. It renders possible an increase in output of boiler horse power from a given boiler plant 10% to 20%.
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4. It reduces the size of the bunkers, thereby reducing the draft of the vessel with a given cargo, or making possible an increase in revenue cargo.



5. It results in a saving of fuel over saturated plants, both operating under the same draft conditions, of 10% to 20%.
6. It reduces the maintenance costs by the prevention of water hammer, leaky flanges, and condensation in the cylinders.
7. It does not prevent rapid, thorough, and frequent cleaning of the tubes.
8. Its construction provides easy access to all screwed joints and the easy removal of the parts.

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PEOPLES GAS BLDG., CHICAGO, ILL.

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Manufacturers of

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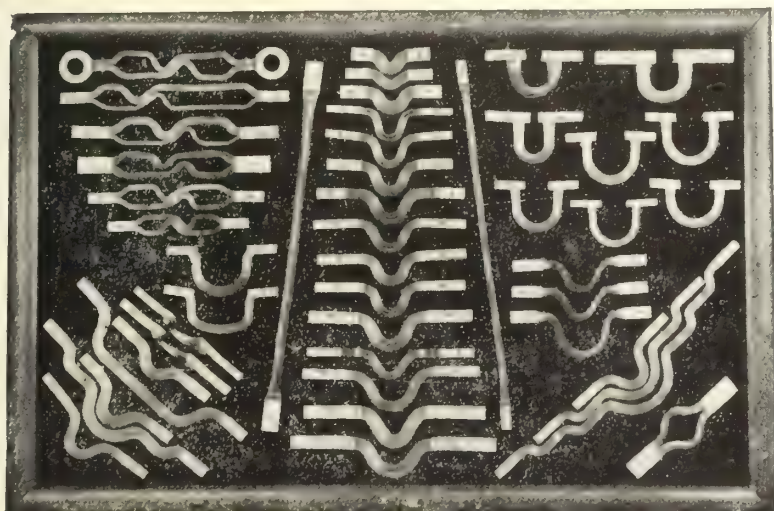
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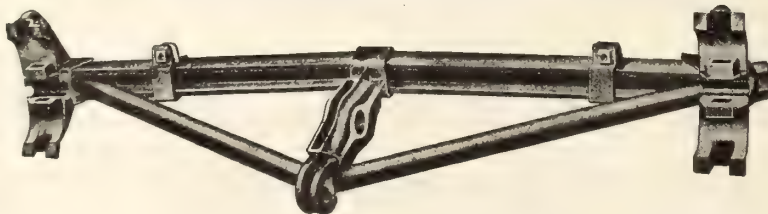
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# Canadian Railway and Marine World

December, 1915.

## Canadian Northern Bridges Over the Carp, Mississippi and Ottawa Rivers and Stoney Creek.

On the Canadian Northern Ry.'s main transcontinental line, about 35 miles west of Ottawa, are four closely located bridges. The first bridge, over the Carp River, consists of two 75 ft. half through girder spans with a 200 ft. truss span between them. The next crossing, the Mississippi River, is of two 75 ft. half through and a

girder span was first erected, then the bottom chords and floor system of the truss span were placed in position as fast as the falsework was built. The trusses were erected by a locomotive crane after the floor system was completed. An air hammer was used for driving the piles, air being supplied by a steam compressor, which was also used

each, and were erected by using a gallows frame, in connection with the 50 ton locomotive crane.

Piles were driven at Stoney Creek, on which a temporary track was constructed, and the girders carried into place from a side track by the locomotive crane. These girders weighed about 25 tons each. This



Carp River Bridge.

121½ ft. half through girder span, between the two 75 ft. spans. A mile farther down is the Stoney Creek bridge, which had three 85 ft. half through girder spans. The fourth is a long crossing over the Chats Rapids of the Ottawa River, and is made up of 10 deck girder spans, including 5 plate girder spans each 115 ft. long, 2 of 121½ ft.,

for driving rivets. This bridge was completed so that the construction trains crossed on July 16, 1914, and track laying was started to the Mississippi bridge and completed so as to allow erection of that bridge to start on Aug. 1, 1914.

A camp was established at this point and maintained until the erection work was

bridge was completed on Sept. 5, 1914, but a serious delay occurred after this. About the time the track was laid to Chats Rapids, the grader's locomotive upset in a sink hole, and a very difficult job of rescuing it was accomplished by calling in the Terry & Tench Co.'s erecting plant. The compressor was set up, and the pile driver used to



Chats Rapids Bridge, Ottawa River.

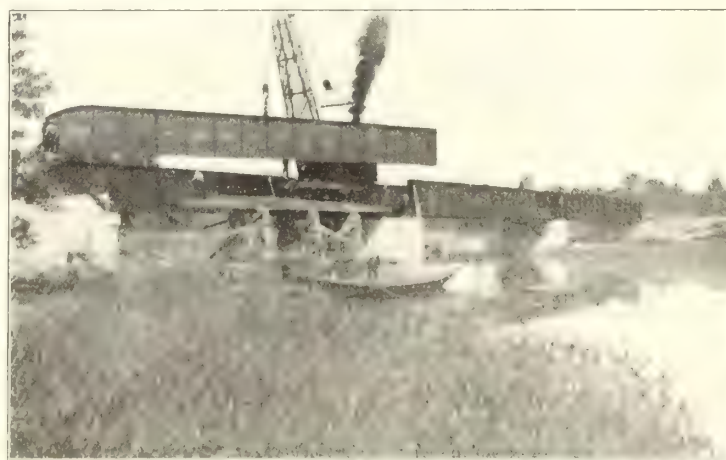


Mississippi River Bridge.

one 200 ft. through rivetted truss and one 290 ft. through rivetted truss spans. The total weight of the bridges is about 2,800 tons.

The masonry foundations were all in at the time the superstructure contractor's men arrived on the job on June 20, 1914. The plant arrived a day later and at the Carp River, driving piles and building falsework started at once. The easterly

started at Chats Rapids, at which point a splendid camp for use through the winter was built, and the men were made as comfortable as they could be at home. The river bed at the Mississippi is rock, so that a temporary timber bent trestle was erected, which permitted running out the girders on the cars, from which they were unloaded into place. The centre girders of the Mississippi River Bridge weighed 52 tons



Stoney Creek Bridge, Placing Last Girder.

build a trestle across the sink hole. Then the big locomotive crane was used to pick up the locomotive and set it on the track. This caused a delay of three weeks, and threw the erection of the Chats Rapids Bridge long into the late autumn and winter.

Work was finally started at Chats Rapids on Sept. 16, 1914, and a 25 ton guy derrick, having an 88 ft. mast and a 75 ft. boom, was erected alongside the track, about 200



loads from the first or easterly span, where a sorting yard was established. The first span, 121 ft. deck girder, was built, by using the same method as at Moosejaw River. The next span was a 200 ft. through truss over deep water, running very swiftly, the bottom being rock with great boulders, making it very difficult to secure a safe footing for the piles. The piles used were 14 in. x 14 in. 50 to 60 ft. long, of British Columbia fir, with cast iron points. They were driven into the rock by the air hammer, sufficiently to get a good bearing. In addition to the deep water and swift current at this crossing, immense quantities of saw logs were constantly being floated down the river to mills at Hull, and other places, and it was necessary to keep watchmen day and night to protect falsework from destruction. On top of the falsework the bottom chords and floor systems of both the 200 and 290 ft. through spans were built, and the permanent track laid as the work advanced. From this track the trusses were erected by the use of the locomotive crane, the material being pushed in on cars by the railway locomotive from the sorting yard. The shop work on these trusses was such that on the 290 ft. span the end posts, which were erected last, did not even require a wedge to be driven in order to connect them to the top and bottom chords. As all of the girder spans in this bridge were of the deck type, without cover plates on the top chords, the greatest care had to be used in handling them. The work of erecting this bridge, which was 1,589 feet long, was completed on Jan. 16, 1915, the camp abandoned and the plant shipped away. The falsework and a large part of the erection equipment was shipped to Troy, N.Y., to be used in building the Congress St. Bridge, across the Hudson River.

The falsework timber used in the whole of the above work was British Columbia fir of the best quality, cut for the purpose. In addition about 200 piles were purchased locally. Throughout the whole work there was not a single serious accident, and the health of the men was splendid.

The contract for the fabrication and erection of the above work was let by Mackenzie, Mann and Co., to Canadian Allis-Chalmers Ltd., Toronto, who sublet the erection to the Terry & Tench Co. Inc. of New York. W. H. Grant, Manager of Construction, Mackenzie, Mann and Co., had general charge. C. T. Smith was Superintendent of the work for the Terry & Tench Co., and much credit is due him for the successful carrying out of the undertaking; Geo. Fisher was his assistant; Nicholas Dowd had charge of the locomotive crane. About 60 men were employed throughout the job, and were all hired locally. The contractors state that it would be difficult to get a better working force of men together. The weather in the summer was greatly in favor of the work but storms in the winter caused some delay.

**Concrete Ties.**—A correspondent enquires as to the reasons why concrete ties have not been a practical success. One of the main troubles is the disintegration of the concrete caused by vibration and pounding under traffic. Some of them have cracked and fractured. The weight, the cost, and the necessity (in most cases) of special fastenings are other unfavorable factors. Some ties have given good service, however. Concrete ties of various designs have been proposed, and several of these have been tried in the track, but only in small numbers, so that the aggregate number of such ties is very limited.—Engineering News.

## The Canadian Pacific Railway's Roll of Honor.

C. H. Buell, Staff Registrar and Secretary Pension Department, C.P.R., has issued two additional lists as given below, which are prefixed as follows:—

"Several thousand officers and employees of this company enlisted for active military duty with the Canadian Expeditionary Forces, and the majority of them are now in Europe, bravely battling for Canada and the Empire. As particulars of army reservists are not available, these lists of those who have given up their lives for their country, or been wounded in action, are necessarily incomplete, and do not therefore indicate fully the extent to which the company's officers and employees have participated in the great struggle."

### List 5.

Abercrombie, J. D.	Clerk	Angus	Wounded
Ainslie, G. M.	Draughtsman	Winnipeg	Wounded
Bartlett, C. N.	Clerk	Montreal	Wounded
Bond, Wm. A.	Biller	Regina	Died
Bowman, Isaac	Constable	Montreal	Wounded
Burch, Arthur	Carpenter	Winnipeg	Died of wounds
Butler, H. B.	Bell Boy	Victoria	Killed in action
Caister, W. V.	Loco. Engineer	Brandon	Wounded
Chalmers, Wm.	Yard Foreman	Outremont	Wounded
Downey, Robt.	Car Cleaner	Glen Yard	Killed in action
Figsby, Wm.	Loco. Fireman	Kenora	Wounded
Gilbert, W.	Loco. Fireman	Regina	Wounded
Green, Sidney	Loco. Fireman	Brandon	Gas poisoning
Greenman, Fredk. M.	Painter	Moose Jaw	Wounded
Griffiths, Thos.	Constable	Montreal	Wounded
Hambridge, Geo. W.	Machinist	Angus	Killed in action
Hitchcock, Geo.	Clerk	Moose Jaw	Suffering from shock
Hobin, Wm.	Checker	Moose Jaw	Wounded
Irving, Robt.	Clerk	Montreal	Wounded and prisoner
Jones, David	Car Repairer	Moose Jaw	Wounded
McChristie, Harry	Loco. Fireman	Schrieber	Suffering from shock
Mackenzie, John	Scrapcutter	Angus	Suffering from shock
McNaughton, Donald	Watchman	Shepard	Wounded
McRae, Murdoch	Boilermaker	Angus	Wounded
Maslen, Walter	Wood Machinist	West Toronto	Wounded
Miller, John	Chief Clerk	Calgary	Suffering from shock
Parsisson, Harry	Storeman	Angus	Wounded
Pollock, Geo.	Clerk	Winnipeg	Wounded
Shiels, Robert	Brakeman	Medicine Hat	Wounded
Steuart, Alan J.	Laborer	Vancouver	Died of wounds
Taylor, Geo. H.	Loco. Fireman	Outremont	Wounded
Taylor, Walter	Checker	Saskatoon	Gas poisoning
Wallis, Jas. H.	Transitman	Brownville Jct.	Wounded
Williams, Hy. J.	Helper	West Toronto	Wounded

### List 6.

Alexander, John	Accountant	Moose Jaw	Wounded
Blades, Roland	Clerk	Winnipeg	Wounded
Carnill, Wm.	Loco. Fireman	Lethbridge	Wounded
Cleeton, Alf. J.	Shed Foreman	Rossland	Wounded and prisoner
Corrigan, Thos. H.	Conductor	Sutherland	Killed in action
Cousens, M. A.	Loco. Fireman	Farnham	Wounded
Degon, W. F. G.	Call Boy	Medicine Hat	Died of wounds
Dobbs, Samuel H.	Loco. Fireman	Lethbridge	Wounded
Frederickson, Carl	Watchman	Shuswap	Wounded
George, Ernest F.	Clerk	Kenora	Wounded and missing
Goodwin, Geo. A.	Brakeman	Calgary	Wounded
Guthrie, A. C.	Clerk	Montreal	Wounded
Hayes, Geo.	Yardman	Medicine Hat	Wounded
Holmes, Geo. A.	Clerk	Victoria	Wounded
Hoyes, Nicholas	Car Cleaner	Winnipeg	Wounded
Jaffray, Wm.	Wiper	Medicine Hat	Killed in action
King, John D.	Constable	Montreal	Killed in action
Kinman, Geo. I.	News Agent	Calgary	Wounded
Legg, Wm. N.	Loco. Fireman	Revelstoke	Wounded
McLaughlin, Milton	Trainman	B. C. Division	Died of wounds
Mills, Samuel	Trucker	Winnipeg	Died of wounds
Molt, Chas. M.	Constable	Montreal	Died of wounds
Morgan, Lewis T.	Apprentice	Winnipeg	Gas poisoning
Phillips, Jas. F.	Car Cleaner	Winnipeg	Wounded
Pope, Chris. L.	Stakeman	Athalmer	Wounded and missing
Quinn, Patrick	Constable	Winnipeg	Believed killed
Ratcliffe, Jos.	Helper	Angus	Wounded
Reid, Francis J.	Porter	Winnipeg	Killed in action
Ritchie, Geo. C.	Clerk	Montreal	Killed in action
Roughton, C. G.	Checker	Calgary	Wounded and missing
Smith, Ernest	Car Repairer	Winnipeg	Wounded
Swann, Walter H.	Clerk	Regina	Wounded and prisoner
Thorpe, M. H.	Constable	Montreal	Killed
Turner, Thos.	Wiper	Moose Jaw	Wounded
Weston, Chas. W.	Brakeman	Sutherland	Wounded
Young, Claudius	Loco. Fireman	Lethbridge	Died of wounds



### New Type of Enlarged Filling Hole for Locomotive Tender Tanks.

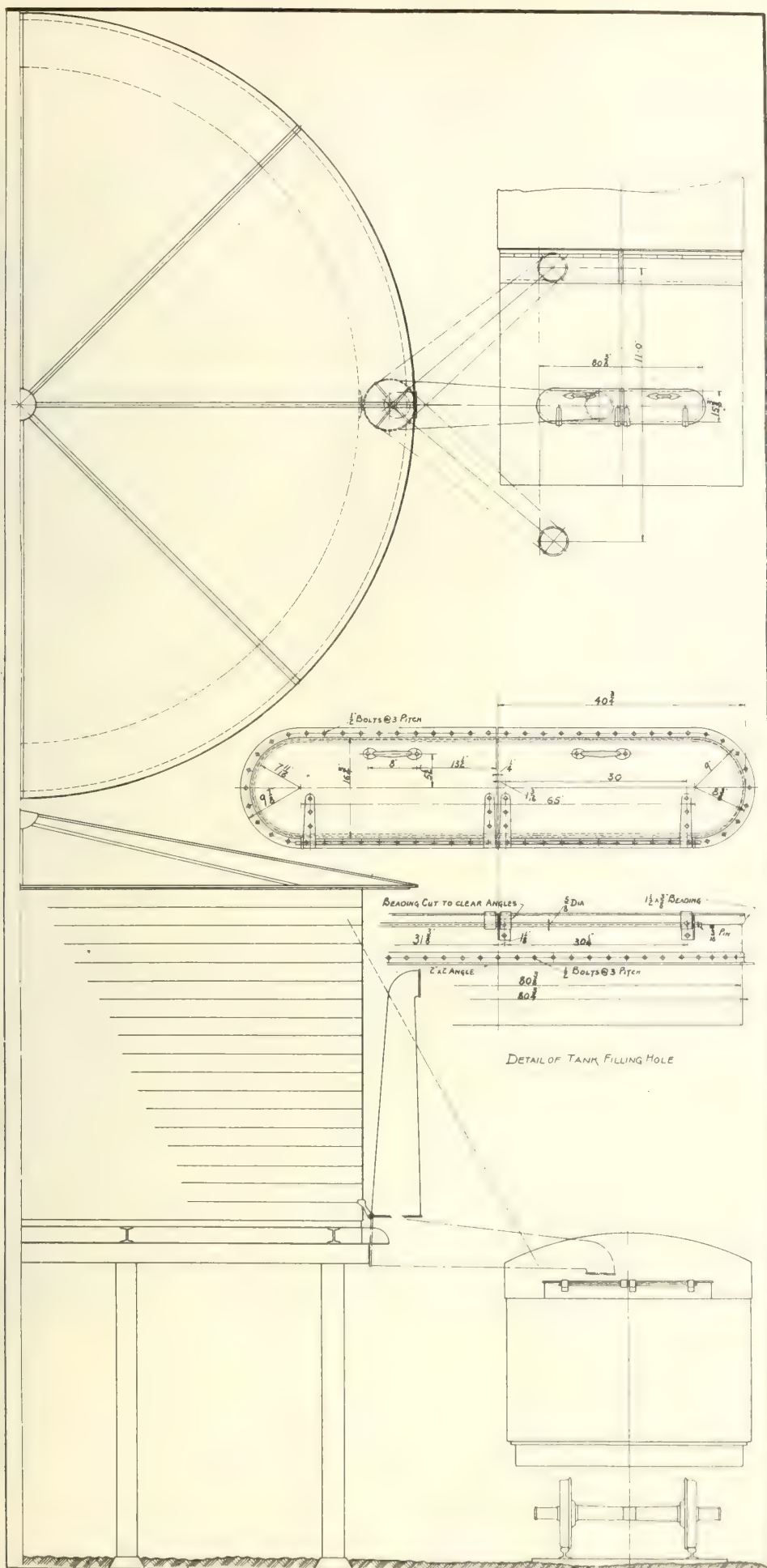
Among other notable features of interest incorporated in the design of the 15 heavy consolidation type locomotives built for the Canadian Government Railways recently, is the enlarged type of filling hole applied to the tender tank, which is shown in the accompanying illustration. It is seldom, if ever, possible to stop heavy freight trains within a predetermined area less than 4 ft. over or under that desired. The cause for this is apparent, and the ruling factor is invariably that known as "slack action," that is, the movement allowed by reason of the compression of draft rigging which in a 60 car train often exceeds 15 ft. This tends to gather at one end or the other and the recoil forces the train beyond any refined movement that may be desired.

Realizing conditions as above stated, it has been the practice on many roads to disconnect the locomotive from the train when taking water, as the manhole of the usual size only allows for a maximum length of travel for the standpipe or tank spout of 6 ft., or 3 ft., each way. By examining the accompanying illustration, it will be noted that a travel of 11 ft. is easily obtained from any usual design of standpipe or water tank spout. Furthermore these conditions are applicable to both sides of the tank and the design is such that it can be applied to any style of tank, large or small.

The construction details do not vary from those usually experienced, except that the cover is made in two sections of  $\frac{1}{4}$  in. steel plate resting directly on top of the  $\frac{3}{8}$  in. filling hole wrapper sheet, which is stiffened by a  $1\frac{1}{2}$  x  $\frac{3}{8}$  in. steel beading as shown, the latter being cut to clear the  $2\frac{1}{4}$  x  $2\frac{1}{4}$  in. hinge angles. The wrapper sheet extends 8 ins. above the water space top plate of tank and is formed with rounded ends so as to give a maximum inside opening  $15\frac{3}{8}$  ins. wide by  $80\frac{3}{8}$  ins. long. For this data we are indebted to A. W. Wheatley, Vice President & General Manager, Canadian Locomotive Co., the builders of the locomotives referred to above.

**American Railway Master Mechanics' Association.**—Following on the association's convention in June, 54 subjects were submitted to the members for letter ballot, and of this number one subject only has been rejected, viz., the recommendation that the locomotiveman's torch be made of steel tubing. Recommendations accepted covered the specification for steel axles, fire box steel, forging, cylinder castings and steel castings; inspection and testing of locomotive boilers; operation of brakes on locomotives and tenders handled dead in trains and offered in interchange; photometering headlights, rules for determining stresses in longitudinal barrel seams and patches, gusset braces and flat surfaces, and staybolts, radial stays, crown bar bolts, etc.; tinware; fuel economy; forging specifications, and boiler washing.

**The Churchill Basin Fish and Traction Co.,** which is a joint stock company registered in Saskatchewan, has been granted a license by the Dominion Government, to occupy for one year a strip of land 40 ft. wide from Big River to the Great Sandbar on the Beaver River, from the latter place to Ile a la Crosse, 125 miles; and from the Great Sandbar to Lac la Rouge, 100 miles. The license is renewable from year to year, and "generally use the said strips of land and the company may make roads thereon, for the ordinary purposes of a common carrier."



Enlarged Filling Hole for Tender Tanks.



# Poles Purchased Throughout Canada in 1914.

Reports received from 381 pole purchasers in Canada in 1914 were used as a basis for the statistics in this bulletin. These purchasers consisted of 17 steam railway companies, 209 telephone companies, and 3 telegraph companies, forming one group, and 29 electric railways and 132 electric light and power concerns forming another group.

pendent telephone lines. Their purchases are of necessity irregular, and have fallen off considerably in the last two or three years, sufficient telephone accommodation having been established. The purchases in 1914 showed a decrease of 47% from those of 1913, while the average price paid increased 11c.

Only nine kinds of wood were reported,

of these two woods have formed the greater part of the purchases in past years, in spite of the increasing scarcity of good material, especially in the case of the eastern tree.

The steam railway, telephone and telegraph group of purchasers bought 65.7% of the poles as compared with 87.8% in 1913. Their purchases in 1914 showed a decrease of 60.4% from those of 1913. The oak, hard pine, jack pine and chestnut poles were all purchased by these companies, which also reported the purchase of 442 treated poles. The electric railway, power and light companies bought 34.3% of the poles as compared with 12.2% in 1913. Their purchases showed a decided increase (49.2%) over 1913.

Over half the poles purchased in Canada in 1914 were under 26 ft. long, the two cedar species forming 97.9% of the total in this class. These two kinds of wood formed over 95% in every length class recorded. Almost a quarter of the total number belonged to the next length class, including poles from 26 to 30 ft. long. The greater part of the white cedar, red cedar, spruce, tamarack and chestnut poles and all the jack pine poles belonged to the 20-25 ft. class. Oak poles were mostly from 31-35 ft. long. The greatest number of Douglas fir poles were over 41 ft. long and all the imported hard pine poles were of this same class.

The foregoing bulletin was prepared by the Interior Department's Forestry Branch, of which R. H. Campbell is Director.

**Forest Fires along Hudson Bay Ry.**—The Conservation Commission announces that large areas of forest have been destroyed this year by fires which have occurred along the Hudson Bay Ry. under construction by the Dominion Government between Pas and Port Nelson, Man. It is estimated that the burned area is not less than 500,000 acres, and the destruction of forest values about \$250,000, in addition to the loss of game and fur bearing animals, as well as railway contractors' supplies. The Forestry Department has attempted to prevent fires over this section, but with only partial effect, owing, it states, to the defective condition of fire protective appliances on locomotives, and to carelessness or negligence on the part of sub-contractors and unemployed laborers tramping along the line.

**The Master Car Builders' Association** has accepted the committees' recommendation on 86 of the 91 subjects submitted for letter ballot after the convention in June. The recommendations adopted cover brake beams, train brake and signal equipment, draft gear of existing wooden cars, specifications and tests of materials, train lighting, car trucks, etc. The rejected subjects were the height of platform buffer for passenger cars, conductors' valves, specification for construction of wooden side doors, emergency dynamo fuses on axle equipment on wooden cars, and desirability of having standards for limiting dimensions for truck sides with pedestal type jaw.

**The Central Railway and Engineering Club of Canada**, which has its headquarters at Toronto, has decided to suspend operation at least until after the war, principally on account of the lack of interest which has been taken in its proceedings of late, and also owing to the want of funds. Unlike the Canadian Railway Club, of Montreal, and the Western Canada Railway Club, of Winnipeg, the Central Railway and Engineering Club was not a purely railway club, in fact, railway men were probably in a considerable minority in its membership.

TABLE 1

	1913.				1914.			
	Number.	Value.	Av. Value.	Per Cent.	Number.	Value.	Av. Value.	Per Cent.
TOTAL OF ALL USES.								
Total	534,592	\$1,188,331	2.22	100.0	283,184	\$660,262	2.33	100.0
White cedar	261,267	323,853	1.99	49.4	241,633	509,503	2.11	85.3
Red cedar	145,569	488,138	3.35	27.2	36,356	138,508	3.81	12.9
Spruce	3,228	6,046	1.16	1.0	2,638	6,740	2.55	0.9
Tamarack	115,517	155,682	1.35	21.6	1,833	2,107	1.15	0.6
Oak	.....	.....	.....	.....	213	1,422	6.68	0.1
Douglas fir	.....	.....	.....	.....	188	1,553	8.26	0.1
Hard pine	.....	.....	.....	.....	126	252	2.00	*
Jack pine	1,450	1,299	0.90	0.3	100	100	1.00	*
Chestnut	167	94	0.56	*	97	77	.79	*
Balsam fir	1,137	1,841	1.28	0.3	.....	.....	.....	.....
White pine	682	8,095	11.87	0.1	.....	.....	.....	.....
Cypress	128	1,056	8.25	*	.....	.....	.....	.....
Hemlock	92	32	0.35	*	.....	.....	.....	.....
Western larch	39	163	4.18	*	.....	.....	.....	.....
Ash	16	32	2.00	*	.....	.....	.....	.....
STEAM RAILWAY, TELEPHONE AND TELEGRAPH COMPANIES.								
Total	469,521	\$833,259	1.77	100.0	186,111	\$357,159	1.92	100.0
White cedar	230,360	382,657	1.66	49.1	157,354	298,196	1.90	84.5
Red cedar	115,714	282,389	2.44	24.6	24,066	48,492	2.01	12.9
Spruce	4,393	4,150	0.94	0.9	2,352	6,548	2.78	1.3
Tamarack	115,212	152,675	1.33	24.5	1,770	2,004	1.13	0.9
Oak	.....	.....	.....	.....	213	1,422	6.68	0.1
Hard pine	.....	.....	.....	.....	126	252	2.00	0.1
Jack pine	1,450	1,299	0.90	0.3	100	100	1.00	0.1
Chestnut	167	94	0.56	*	97	77	.79	0.1
Douglas fir	.....	.....	.....	.....	33	68	2.06	*
Balsam fir	1,137	1,841	1.28	0.3	.....	.....	.....	.....
White pine	682	8,095	11.87	0.1	.....	.....	.....	.....
Hemlock	90	27	0.30	*	.....	.....	.....	.....
Ash	16	32	2.00	*	.....	.....	.....	.....
ELECTRIC RAILWAY, POWER AND LIGHT COMPANIES.								
Total	65,071	\$355,072	5.45	100.0	97,073	\$303,103	3.12	100.0
White cedar	33,907	143,196	4.22	52.1	84,279	211,307	2.51	86.8
Red cedar	29,855	205,749	6.89	45.9	12,290	90,016	7.32	12.7
Spruce	835	1,896	2.27	1.3	286	192	.67	0.3
Douglas fir	.....	.....	.....	.....	155	1,485	9.58	0.1
Tamarack	305	3,007	9.89	0.5	63	103	1.63	0.1
Cypress	128	1,056	8.25	0.2	.....	.....	.....	.....
Western larch	39	163	4.18	*	.....	.....	.....	.....
Hemlock	2	5	2.50	*	.....	.....	.....	.....

\* Less than one tenth of one per cent.

TABLE 2.

	1913.				1914.			
	Total.	all length classes.	20 to 25 ft. (57.1%).		Total.	all length classes.	20 to 25 ft. (57.1%).	
Total	283,184	\$660,262	2.33	100.0	161,544	\$203,460	1.26	100.0
White cedar	241,633	509,503	2.11	85.3	140,444	169,935	1.21	86.9
Red cedar	36,356	138,508	3.81	12.8	17,839	30,266	1.70	11.0
Spruce	2,638	6,740	2.55	0.9	1,157	920	.80	0.7
Tamarack	1,833	2,107	1.15	0.6	1,812	2,038	1.12	1.1
Oak	213	1,422	6.68	0.1	20	12	.60	*
Douglas fir	188	1,553	8.26	0.1	77	122	1.58	*
Yellow P. pine	126	252	2.00	*	.....	.....	.....	.....
Jack pine	100	100	1.00	*	100	100	1.00	0.1
Chestnut	97	77	.79	*	95	67	.71	0.1
26 to 30 ft. (23.6%); 31 to 35 ft. (8.4%).								
Total	66,689	\$139,988	2.10	100.0	23,917	\$105,003	4.39	100.0
White cedar	60,508	122,440	2.02	90.7	18,952	84,081	4.44	79.2
Red cedar	5,463	15,442	2.83	8.2	4,474	18,917	4.23	18.7
Spruce	707	2,079	2.94	1.1	376	1,308	3.48	1.6
Tamarack	9	20	2.22	*	1	3	3.00	*
Oak	.....	.....	.....	.....	90	630	7.00	0.4
Douglas fir	2	7	3.50	*	24	64	2.67	0.1
36 to 40 ft. (6.5%); 41 ft. and over (4.4%).								
Total	18,582	\$110,708	5.96	100.0	12,452	\$101,103	8.12	100.0
White cedar	14,035	77,185	5.50	75.5	7,694	55,862	7.26	61.8
Red cedar	4,271	32,029	7.50	23.0	4,309	41,854	9.71	34.6
Spruce	186	863	4.64	1.0	212	1,570	7.41	1.7
Oak	82	615	7.50	0.4	21	165	7.86	0.2
Tamarack	5	16	2.00	*	3	30	10.00	*
Hard pine	.....	.....	.....	.....	85	1,360	16.00	0.7
Chestnut	.....	.....	.....	.....	126	252	2.00	1.9
.....	.....	.....	.....	.....	2	10	5.00	*

\* Less than one tenth of one per cent.

That the market in Canada for wooden poles is very irregular is demonstrated by the following figures showing numbers purchased in the past five years:—1910, 782,841; 1911, 585,703; 1912, 608,556; 1913, 534,982; 1914, 283,184. The activity of the different railways in extending their lines is one factor that affects these figures. Some of the provincial governments which control telephone companies purchase large stocks of poles and furnish these to small inde-

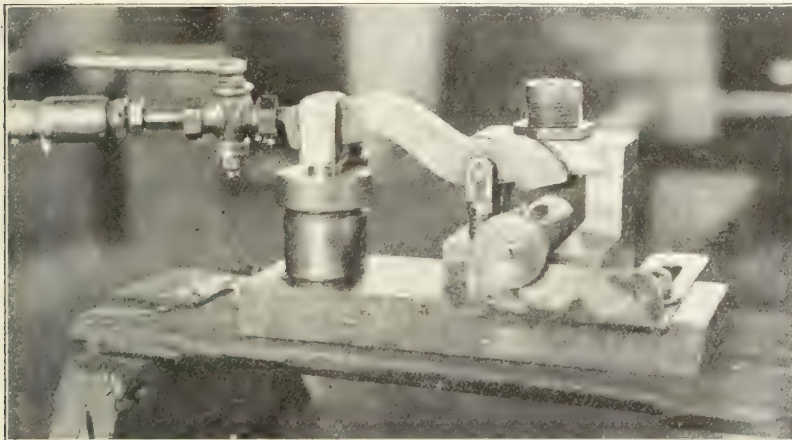
pendent telephone lines. Their purchases are of necessity irregular, and have fallen off considerably in the last two or three years, sufficient telephone accommodation having been established. The purchases in 1914 showed a decrease of 47% from those of 1913, while the average price paid increased 11c. Only nine kinds of wood were reported,



# Railway Mechanical Methods and Devices.

## Drilling Cotter Holes in Pins at Michigan Central Railroad Shops.

The jig shown in the accompanying illustration, with its auxiliary bushings, is in use in the Michigan Central Rd. locomotive shops, St. Thomas, Ont., for drilling cotter holes in the ends of such pins as are held in place by cotters. It is very simple in



Drilling Cotter Holes in Pins.

design, and because of a simplicity of action is very rapid in turning out work. The jig consists of a forged base, machined all over. In the upper face there is a V block, bridged over top by a bar into which drill jig bushings of different diameters as required may be screwed. The pins to be drilled are set in this V block, and located longitudinally by the locating gauge in the foreground, against which the head of the pin is bearing. This locating gauge is held to the jig base by a bolt shown on the right, adjustment of the gauge being possible through the slot in the gauge. On the left end of the base there is a small vertical air cylinder,

## Milling Slots in Crown Stays in Grand Trunk Railway Shops.

A simple jig for milling slots in crown stays is shown in the accompanying illustration, which shows the jig used in the G.T.R. shops, Stratford, Ont. It consists of a simple forged base, which can be bolted to the milling machine table. The upper face

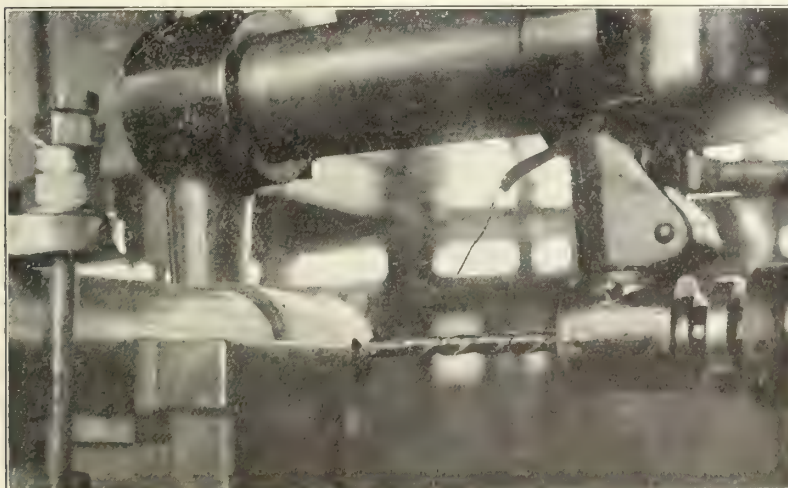


Jig for Holding Crown Stays for Slotting.

of the base is grooved to receive the crown stays to be slotted, straddling which there is a holding on strip, secured by two nuts, one of which is plain, and the other a handle nut, the plain nut being run on by hand, the final tightening being by hand. The milling cutter is run on the head of the stay from the right.

## Cutting Crosshead Keyways in Piston Rods at Michigan Central Rd. Shops.

The method followed in the M.C.R. locomotive shops, St. Thomas, Ont., for cutting



Cutting Crosshead Keyways in Piston Rods.

attached to the rear end of a fulcrum arm, pivoted beside the V block, the short arm of which bears down on the pin when the air is turned on. This provides a quick and ready method of securing the work while drilling.

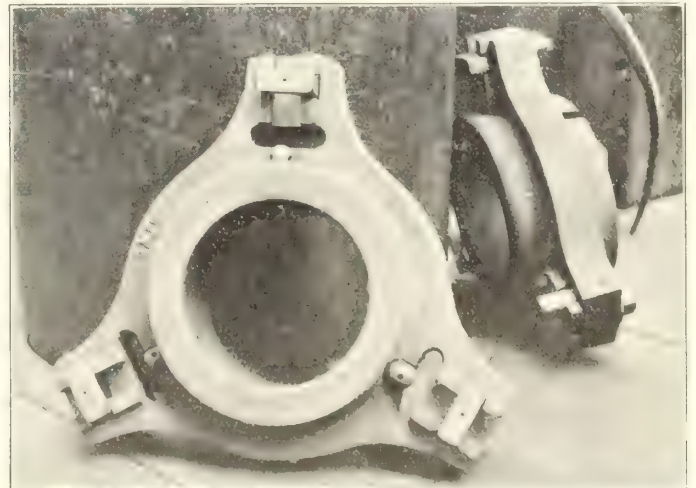
**Pere Marquette Rd.**—The date on which the sale of this railway is to take place has been postponed to Dec. 6.

crosshead keyways in piston rods, is shown in the accompanying illustration. In the rod as it comes turned from the lathe, a drill hole is made through the crosshead end, at the end of where the keyway is to be located. The rod is then mounted in the vise on a milling machine table, and clamped down, with the drilled hole parallel to the table. A spiral milling cutter of diameter exactly the same as the thickness

of the keyway is placed in the milling machine spindle and the work lined up. The table with rod is run across so that the cutter projects through the drilled hole on the far side, where the cutter is supported by the milling arm. The feed of the machine carries the rod along the desired length of the keyway, forming it complete in one pass. The entire time for milling the keyway, including the setting up, is under 12 mins.

## Heavy Boring Bar Head at Grand Trunk Railway Shops.

A heavy boring bar head which has a quick adjustment of the cutting tools is in use in the G.T.R. shops, Stratford, Ont. A front and side view of the head is shown in the accompanying illustration. In general appearance it resembles the usual boring bar head, consisting of a cast iron ring, with three projecting arms, slotted radially to receive the tools. These tools are held in place by a square ended eye bolt, with a nut on the reverse side. The principal



Heavy Boring Bar Head with Tool Adjustment.

point of value in the head is the tool adjustment feature, which consists of a small radial screw bearing up under the base of each tool. Each of these adjustment screws has 4 radial holes for turning pins, by means of which the screw may be turned, forcing the tool out to its required cutting position. This head is used on the heavy boring bar of the horizontal boring mill, wherein the work is carried along on the



the bar having no longitudinal motion. It might equally well be adapted to the movable head such as is commonly used on the lathe.

### Portable Cylinder Boring Machine.

W. S. Bazole, Master Mechanic, Rapid Transit Subway Construction Co., New York, has favored Canadian Railway and Marine World with the accompanying illustration of a cylinder boring machine, or what is

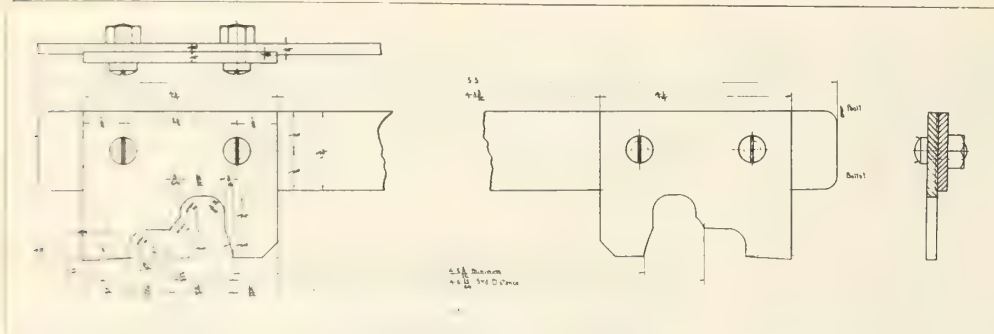


Portable Cylinder Boring Machine.

known as a boring bar, for use in the field. The photograph practically explains itself. For the motive power, Mr. Bazole used a small air boring machine by placing a small gear on the piston of the air drill.

### Wheel Mounting and Checking Gauge for Canadian Northern Railway.

The standard M.C.B. wheel mounting and checking gauge illustrated herewith has been developed by the Canadian Northern Ry. mechanical department for use in its shops, to replace the one piece gauges commonly used. It consists of a cross bar to which contour gauges are secured by  $\frac{3}{8}$  in. bolts, which makes it much easier to manufacture and replace if anything happens to one end of the gauge. The end pieces are milled out in batches, and are readily attached to the bar. It is being supplied to all the shops on the system.

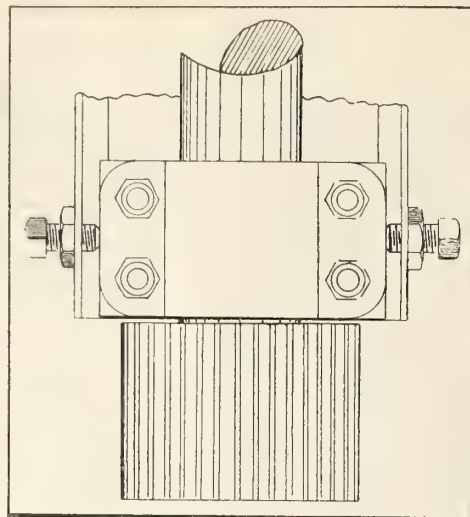


M.C.B. Wheel Mounting and Checking Gauge.

### Repairs on Bridge Bearing Box.

One of the difficulties encountered in the operation of drawbridge no. 6, at Sault Ste. Marie, Mich., supervised and maintained by the Duluth, South Shore and Atlantic Ry., was in the rapid wear of the bolts on the main driving pinion bearing box. The bridge was constructed in 1884, and to say the least, bridge designing has been considerably improved since that date. As shown in the accompanying illustration, the bearing-cap and the brass were held in position by the use of 4 1 in. bolts. The shafting being  $3\frac{1}{2}$  ins. diam., bolts of 1 in. diam. were repeatedly found to be too light for the service. The trouble has been remedied by re-boring the bolt holes to suit  $1\frac{1}{4}$  in.

bolts, the bearing casting being sufficiently large to admit of the increase in the size of the holes. Two holes were also drilled and tapped in the angle-plate at each end of the bearing for 1 in. set screws, to aid in preventing any side motion of the bearing. The work was done before the opening of navigation this year, and during the period that has elapsed since that time no trouble has been experienced with the bearing, and will not likely be for a long period of time.



Details of Bridge Bearing Box.

—J. G. Hoppell, Electrical Superintendent of Bridges, Canadian Pacific Ry., Sault Ste. Marie, in Railway and Locomotive Engineering.

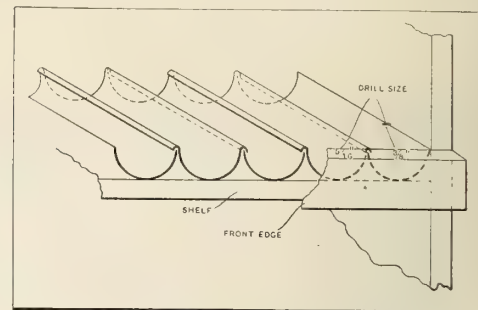
### Drill Holder.

A holder for drills and similar tools must meet the following conditions in order to be satisfactory: First, it must be easy to inspect all of the drills if several are held in the same compartment. Second, it must be easy to pick out either one or all of the drills held in a given compartment. Third,

the drills should lie straight in the holder. Fourth, it must be easy to pick up the drills. Drills are returned to the toolroom more or less greasy, and as a result they are likely to accumulate dust and dirt as well as to cause any wood with which they come in contact to become soaked with oil. Bearing these facts in mind, in addition to the detailed requirements which have already been outlined, the drill holder shown in the accompanying illustration was designed, in the term "designing" can properly be applied to the making of such a simple thing as a drill holder.

The shelf on which these drill holders are placed should slope forward in order that a clear view of the drills may be obtained; and a wide shelf containing sev-

eral rows of holders can be used, or a single row of holders may be placed on a narrow shelf, according to the requirements of different toolrooms. In connection with the accompanying illustration, it should be observed that the length of the holder does not necessarily have to be equal to the length of the drills. The holders are made of tinned sheet metal and each alternate section has turned over edges which are bent up tight over the edges of the inter-



Drill Holder made of Tinned Sheet Metal.

mediate sections. The joints can be soldered if it is desired to make a smoother or more permanent connection than it is possible to obtain by simply tightening the joint in a vise. The holders are fastened to the shelf by means of nails in the bottoms of the sections, one nail to a section being sufficient. A convenient method of forming the sections is to bend them over a piece of iron pipe of suitable size, if a machine for this purpose is not available.—R. S. Forststedt, in Machinery, New York.

### The Great Services of Railway Engineers.

Chas. D. Marx, in his presidential address at the American Society of Civil Engineers' annual meeting in San Francisco recently, said: "In railway engineering, think you that the men who through virgin forests and sandy deserts, through miasmatic swamps and rocky canyon, across rivers and over mountains, carried the steel bands that now tie mankind so closely together—think you that these men were engaged in an occupation likely to kill their ideals? When the final balance is struck, I warrant that the debit will not be on the side of this grand army of peace of the present, as compared with the armies of war of the past and present, for deeds of ideal heroism, self-sacrifice and devotion to duty. It seems like carrying coals to Newcastle to speak in an audience like this of what the railways have done for all countries—for our own country especially, and more particularly for the Pacific slope. It was not so long ago when I read of the beginning of construction of the Trans-Siberian Railway which now unites the Atlantic and the Pacific on the other continent. The Cape to Cairo Railway, too, has passed through the stages of its preliminary surveys and partial construction. What centuries of fighting could not accomplish these two roads will in time accomplish. The light of civilization will be spread on the Dark Continent. Who then is destructive of idealism? The man whose works are a means, if but a humble one, of bringing his fellow beings into a direct contact with the wonders of creation, or he who, enveloped in the mantle of exclusiveness, bemoans this defiling contact?"

C.P.R. Employees in Winnipeg have a Social Club with over 900 members. A proposition is under consideration for the erection before the winter season of 1916-17 of a permanent club building.

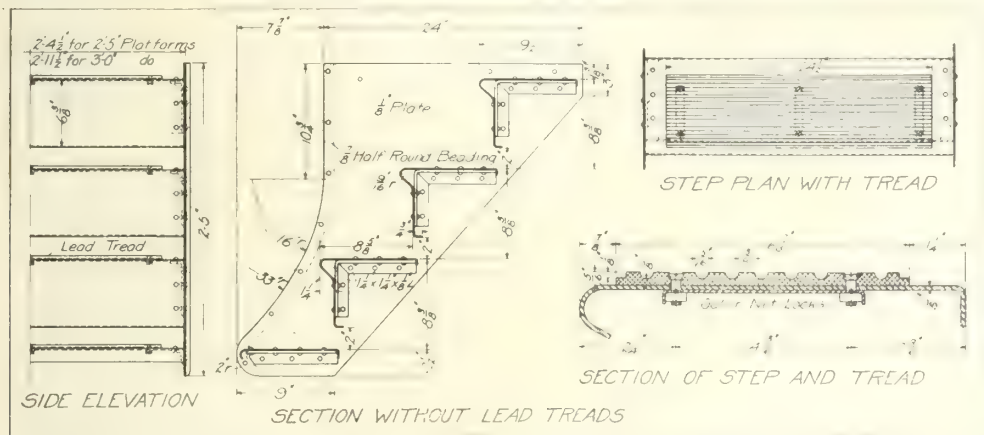


## Passenger Car Steps, Canadian Pacific and Grand Trunk Railways.

Both the C. P. R. and G. T. R. have designed for their new equipment, new passenger car steps, that embody some features of special interest, particularly as showing the advent of steel for all classes of work, to replace wooden construction, and also, in one case, an attempt to make a step that is more convenient for passengers entering and leaving the car.

**C. P. R. Steps.**—The new all steel steps of the C. P. R. were developed recently, and are illustrated herewith. They are being

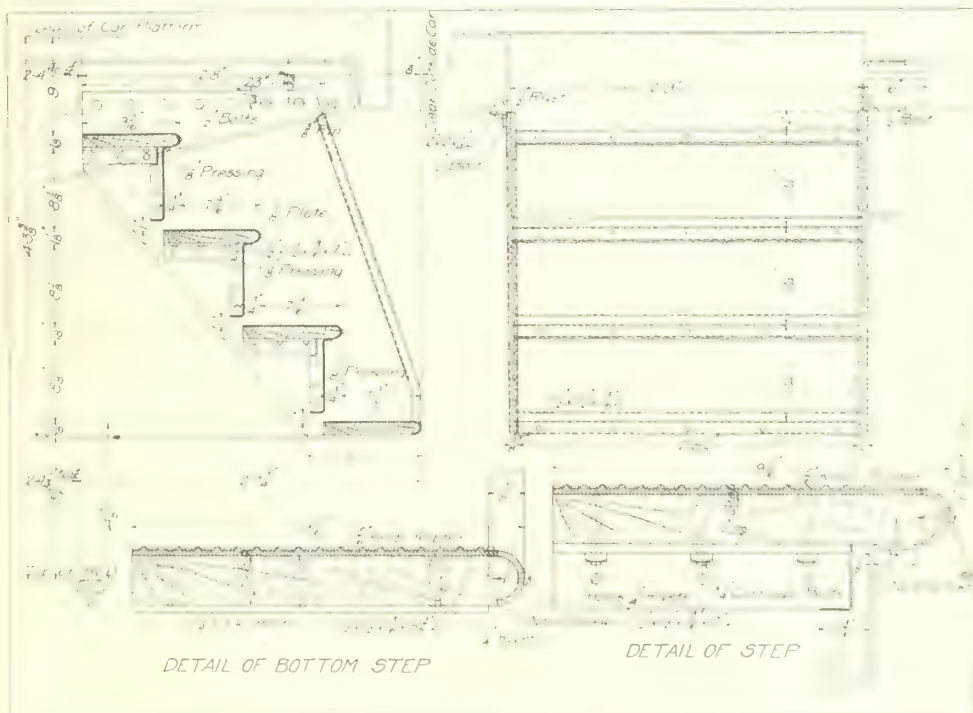
the upper one of which is secured to the under side of the step above. The steps are of  $1\frac{1}{8}$  in. wood, 9 5-16 ins. deep, carried on  $1\frac{1}{2}$  by  $1\frac{1}{2}$  by 3-16 in. angle clips 7 ins. long, rivetted by  $\frac{1}{4}$  in. rivets to the end pieces, and on the top flange of the risers. To the angles, the steps are secured by  $\frac{1}{4}$  in. carriage bolts, and to the risers by no. 10 screws. The front edge of the step is protected by a half section of 1 in. pipe, secured to the wood by no. 10 screws. The tread surface of the step is a piece of 5-16 in.



Standard Four Tread Car Steps, Canadian Pacific Railway.

used on both the new steel and wooden passenger equipment. Two side plates of  $\frac{1}{8}$  in. sheet steel are protected along the outer edge by a band of  $\frac{7}{8}$  in. half round beading from top to bottom. The step and riser is made in one piece of  $\frac{1}{8}$  in. plate, flanged at both edges, and rounded with a 9-16 in. radius on the front edge of the step. This formed step is secured to the side members by a bent  $1\frac{1}{4}$  by  $1\frac{1}{4}$  by  $\frac{1}{8}$  in. angle at each end. These angles are spot welded to both step, riser and end pieces, in place of the former practice of rivetting. The steps are 23 inches wide, 73 inches deep in the clear, and with a rise of 83 inches. The treads are lead plates,  $24\frac{1}{2}$  by  $6\frac{7}{8}$  ins., and 5-16 in. thick, grooved on the surface, and secured to the step by 6 countersunk  $\frac{1}{4}$  in. bolts, the nuts of which are locked under the step by 2 bolt nut locks.

knob rubber. Each step is 2 ft.  $8\frac{1}{8}$  ins. wide, with a tread depth in the clear of 7 9-16 ins., with a rise at each step of  $9\frac{1}{4}$  ins. The steps are secured to the car body by 2 by 2 by  $\frac{1}{4}$  in. angles and  $\frac{1}{2}$  in. bolts.



Standard Four Tread Passenger Car Steps, Grand Trunk Railway.

**G. T. R. Steps.**—The new steel frame step in use on the G. T. R., which is illustrated herewith, has been made standard on the system. The special point about it, apart from its all steel frame construction, is the fact that the usual 3 treads have been replaced by a 4 tread arrangement, making unnecessary the use of the stepping boxes on entering and leaving the car. The standard step formerly in use on the G. T. R. was the same as that in use on standard sleeping cars, which also use the stepping box; but the latter has been found to be dangerous, owing to its small size and the distance from the lower step to it, the passengers sometimes stepping on the box edge, causing it to turn over, frequently resulting in injury. With this four tread arrangement, it is now possible to step from the platform to the lower tread without difficulty, as it is only 145 inches from the rail level to the lower step.

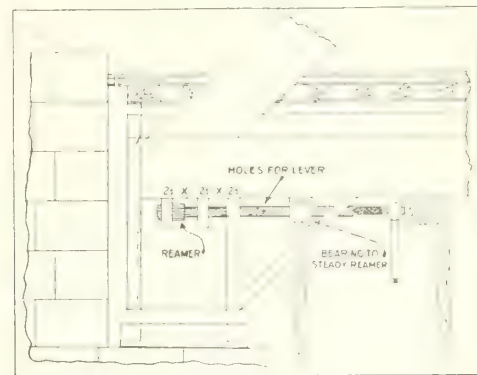
The construction is simple. The sides consist of two  $\frac{1}{8}$  in. plates, the outer edges of which are protected with a slit pipe,  $\frac{7}{8}$  in. diam., fitting over the plate edge. The risers of the steps are of similar stock to the end pieces,  $\frac{1}{8}$  in. pressed sheet steel, with end flanges for rivetting to the end pieces, and with top and bottom flanges,

The American Society of Mechanical Engineers' annual meeting will be held at New York, Dec. 8 to 10. The railway meeting will take place on Dec. 8, when papers will be presented dealing with the operation of parallel and radial axles of a locomotive by a set of single cylinders, and with four-wheel trucks for passenger cars, and possibly one on six-wheel trucks for passenger cars.

## Bridge Repairs on Canadian Pacific Railway.

In draw bridges which are in service since 1887 the end jacks and the jack pins are practically worn out and the pin seats are worn oval about  $\frac{1}{4}$  in. The new pins were made  $\frac{1}{4}$  in. larger in diameter and a suitable reamer was secured to ream out the pin holes, to take the new pins.

The accompanying illustration shows the arrangement whereby the reaming was done. The reamer was fitted on a mandrel



of suitable length and suitable cast iron bearings were provided to steady the mandrel, and three equidistant radial holes were drilled to turn the mandrel with a bar, and a ratchet was inserted on the other end to feed the reamer. The holes to be reamed were 3 x  $2\frac{1}{2}$  ins., and 4 holes in all, which were done by 3 men in 3 days' time. Two men were working on the reamer and the third man was watching

for trains, and when they were in sight he signaled and the reamers were taken out of the cut, because there was severe rattling when the train was going over the bridge which might have broken the reamer. The average number of trains was one an hour. J. G. Koppell, Electrical Superintendent of Bridges, Canadian Pacific Ry., Sault Ste. Marie, Ont., in Railway and Locomotive Engineering.



# Orders by the Board of Railway Commissioners for Canada.

Published with June 1914, Canadian Railway Commission Report. It is published in each issue summaries of orders passed by the Board of Railway Commissioners, so that subscribers who have ordered our paper have a continuous record of the Board's proceedings. No other paper has done this.

Orders are given of orders, immediately following the summary, are those on which the orders were drawn.

24325. Oct. 18.—Relieving G.T. Pacific Branch Lines Co. from erecting fences, gates and cattle guards on the Alberta Coal Branch, mileage 0 to 33.6, Sask., from mileage 0 to 1.12 to be a temporary exemption.

24326. Oct. 18.—Authorizing C.P.R. to operate bridge 100.4, Portal Section, B.C.

24327. Oct. 18.—Amending order 11462, Aug. 27, 1910, re Canadian Northern Ontario Ry. crossing of Front St., Trenton, Ont.

24328. Oct. 18.—Ordering that interlocker where G.T.R. crosses Main St., at intersection of Ferguson Ave., Hamilton, Ont., be operated by day and night watchmen, G.T.R., as agent for Hamilton, Grimsby and Beamsville Electric Ry., to appoint watchmen, their wages to be paid equally by City of Hamilton, G.T.R., and Hamilton, Grimsby and Beamsville Electric Ry.

24329. Oct. 18.—Relieving Grand Trunk Pacific Branch Lines Co. from maintaining fences, gates and cattle guards on its Outknife Branch, mileage 0 to 33.6, Sask., from mileage 0 to 1.12 to be a temporary exemption.

24330. Oct. 18.—Extending, to Nov. 30, time within which C.P.R. shall install bell at Eglinton Ave., York Tp., Ont.

24331. Oct. 18.—Authorizing Canadian Northern Ry. to build siding across public road between Lot 35, Con. 3, Markham Tp., and Lot 1, Con. 3, Whitchurch Tp., Ont.

24332. Oct. 18.—Ordering C.P.R. to rebuild bridge at Notre Dame St., St. Pie, Que., with span to provide 20 ft. clear roadway, with room back of supports for sidewalks, to be completed by Dec. 31.

24333. Oct. 18.—Authorizing G.T.R. to rebuild bridge 52 over public road between Cons. 9 and 10, Hope Tp., Ont.

24334. Oct. 18.—Authorizing Canadian Northern Ry. to open for traffic its line between Grand Marais and Birds Hill, Man., 50 miles.

24335. Oct. 18.—Approving location and details of G.T.R. proposed station at Stoney Creek, Ont., building to be ready for occupation by Dec. 1.

24336. Oct. 19.—Approving proposed change in location of G.T.R. siding for Toronto-Hamilton Highway Commission, near Oakville, Ont.

24337. Oct. 19.—Authorizing C.P.R. to build spur across Lyons St., Vernon, B.C.

24338. Oct. 18.—Amending orders 10749, 16005, and 19564, May 10, 1910; Feb. 16, 1912, and June 11, 1913, respectively, re G.T.R. crossing of Hurontario St., Port Credit, Ont., to provide that 20% required to be contributed by Toronto Tp. toward maintaining watchmen there, be paid half by Toronto Tp. and half by Port Credit, Ont.

24339. Oct. 19.—Authorizing Village of St. Isidore d'Auckland, Que., to close existing crossing, to divert highway along west side of Maine Central Rd., to connect with range road, and to build highway crossing at intersection of four roads, crossing Maine Central Rd. at right angles, and connecting diverted road along railway, village to pay cost of diversion, and Maine Central Rd. cost of building crossing.

24340. Oct. 19.—Dismissing N. K. Luxton's complaint on behalf of livery and hotel busmen at Banff, Alta., for hearing of Board to deal with station platform privileges on C.P.R. there.

24341. Oct. 18.—Approving Bell Telephone Co. agreement with Fingal Telephone Co., Sept. 23.

24342. Oct. 18.—Approving Edmonton, Dunvegan and British Columbia Ry. Standard Sleeping and Parlor Car Tariff, C.R.C. no. S-1.

24343. Oct. 19.—Ordering G.T.R. to install gates at crossing of highway immediately west of Lorne Park station, Ont., to be operated by day and night watchmen; 20% of cost of installing gates to be paid out of railway grade

crossing fund, 60% by G.T.R., and 20% by Toronto Tp.; 20% cost of maintenance to be paid by G.T.R., and 50% by Toronto Tp.

24344. Oct. 19.—Relieving C.P.R. and Morrissey, Fernie and Michel Ry. from maintaining night signalman to operate interlocking plant at Fernie, B.C.; home signals and derrails to be set clear for C.P.R.; key of tower to be left in C.P.R. custody; all signals and derrails on Morrissey, Fernie and Michel Ry. to be set at stop.

24345. Oct. 19.—Extending, for one month from date, time within which Toronto Suburban Ry. may cross, temporarily, for construction purposes only, C.P.R. main line track near Guelph, Ont., between 6.30 a.m. and 6.30 p.m.

24346. Oct. 20.—Recommending to Governor in Council for sanction, Edmonton, Dunvegan and British Columbia Ry. operating rules and regulations.

24347. Oct. 20.—Ordering that C.P.R., G.T.R., and C.N. Ontario Ry. pay to City of Toronto their proportions of expense incurred to date on work of high level bridge over Don Improvement and over their respective railways at Queen St. East, Toronto, upon receipts monthly of certified progress estimates showing amount expended thereon until completed.

24348. Oct. 20.—Approving Bell Telephone Co. agreement with McKillop, Logan and Hibbert Telephone Co., Oct. 7.

24349. Oct. 21.—Authorizing City of Toronto to build foot subway at Ashdale Ave., under G.T.R.; subway to provide for laying of five tracks.

24350. Oct. 21.—Extending, to Dec. 1, time within which G.T.R. shall install gates at Barton St., Barton Tp., Ont.

24351. Oct. 21.—Authorizing C.P.R. to take certain lands at Conquest, Man., for extending station grounds, sites for elevators and other structures, and for accommodation of traffic.

24352. Oct. 22.—Extending, to Nov. 10, time within which G.T.R. shall install derail at siding at Killaloe, Ont.

24353. Oct. 23.—Amending order 23950, July 7, re operation of G.T.R. siding across William St. and across and along Ontario St., Kingston, Ont.

24354. Oct. 22.—Approving Bell Telephone Co. agreement with Lake of Bays and Haliburton Telephone Co., Oct. 7.

24355. Oct. 22.—Approving Bell Telephone Co. agreement with Beeton Telephone Co., Oct. 13.

24356. Oct. 25.—Authorizing G.T. Pacific Branch Lines Co. to build spur from its Alberta Coal Branch across road allowance at mileage 3.8, North Alberta District.

24357. Oct. 25.—Approving Canadian Northern Ry. Standard Tariff of Sleeping and Parlor Car Tolls, C.R.C. nos. E S-2 and W S-8; and rescinding order 24307, Oct. 12.

24358. Oct. 25.—Approving Canadian Northern Express Co.'s Standard Tariff of Maximum Express Tolls, C.R.C. 834, to apply on the Mountain Division west of Tollerton, Alta.

24359. Oct. 25.—Authorizing Saskatchewan Board of Highway Commissioners to build highway crossing over east end of G.T. Pacific Branch Lines Co.'s station grounds at Dewar Lake, Sask.

24360. Oct. 21.—Ordering Canadian Northern Ry. to fence north side of right of way from Vita to Caliento, Man., by May 1, 1916.

24361. Oct. 23.—Ordering C.P.R., within 60 days, to install improved type of automatic bell at crossing of public road 950 ft. west of Nerepis station, N.B.

24362. Oct. 23.—Relieving C.P.R. from providing further protection at crossing of Dundas St., just east of Cooksville station, Ont.

24363. Oct. 26.—Authorizing C.P.R. to build spur for Dominion Government terminal elevator at Calgary, Alta.

24364. Oct. 26.—Authorizing G.T.R. to build siding for Russell Motor Car Co., Toronto.

24365. Oct. 26.—Authorizing C.P.R. to build spur for Halliday Bros., Winnipeg, Man.

24366. Oct. 26.—Approving revised location of G.T. Pacific Branch Lines Co.'s Biggar-Calgary Branch through s.e. ¼ Sec. 11, and n. ½ Sec. 2-35-17, w. 3 m., Sask.

24367. Oct. 26.—Extending, to Dec. 31, time within which G.T.R. shall complete siding for W. H. Banfield & Sons, Toronto, Ont., as authorized by order 23928.

24368. Oct. 27.—Dismissing C.P.R. application to remove station agent at New Dayton, Alta.

24369. Oct. 27.—Authorizing Sasman rural municipality 336, Sask., to build highway over Canadian Northern Ry. between Secs. 9 and 10-34-12, w. 2 m., Sask.

24370. Oct. 28.—Approving Bell Telephone Co. agreement with West Williams Rural Telephone Association, Oct. 18; and rescinding order 11236, July 19, 1910.

24371. Oct. 28.—Extending, to Nov. 15, time within which Montreal & Southern Counties Ry. shall install interlocking plant at crossing of C.P.R. on Lot 34, St. Paul d'Abbotsford Parish, Que., as required by order 24054, Aug. 9.

24372. Oct. 27.—Relieving G.T.R. from providing further protection at first crossing east of Findlay station, Ont.

24373. Oct. 28.—Amending order 24202, Sept. 20, re London and Port Stanley Ry. crossing of London St. Ry. on South St., London, Ont.

24374. Oct. 28.—Approving Bell Telephone Co. agreement with Nelson Telephone Co., Oct. 2; and rescinding order 7703, Aug. 5, 1909.

24375. Oct. 28.—Authorizing G.T.R. to rebuild bridge 112 over stream on Lot 12, Con. 6, Markham Tp., mileage 11.03 from Scarboro Jct., Ont.

24376. Oct. 28.—Approving Bell Telephone Co. agreement with The Peoples Telegraph & Telephone Co., Sept. 27; and rescinding order 11017, June 28, 1910.

24377. Oct. 21.—Authorizing British Columbia Electric Ry. to cross Vancouver, Victoria & Eastern Ry. & Navigation Co. (G.N.R.) proposed industrial tracks; to connect with same; to remove crossover between V. & E. R. existing tracks and C.P.R., and to rebuild same 125 ft. easterly; and to cross C.P.R., all on Front St., New Westminster.

24378. Oct. 28.—Authorizing Edmonton, Dunvegan & British Columbia Ry. to build bridge over Smoky River, Alta.

24379. Oct. 29.—Approving Michigan Central Rd. plans of proposed change in approach to station at Sheddin, Ont.

24380. Oct. 29.—Authorizing C.P.R. to stop trains 33 and 34 at Kemptville, Ont., and rescinding order 23671, May 8.

24381. Oct. 29.—Ordering Michigan Central Rd. to publish supplement to its tariff, C.R.C. 1743, embodying rule re minimum weight on traffic to its St. Clair Division. This order is given in full on another page.

24382. Oct. 30.—Authorizing G.T.R. to build siding for Canadian Explosives, Ltd., on part Lot 2, Beloeil Parish, Que.

24383. Nov. 3.—Authorizing Tate rural municipality 279, Sask., to open up highway crossing over G.T. Pacific Ry. north of Secs. 35 and 36-28-21, w. 2 m., G.T.P.R. to pay maintenance of crossing.

24384. Oct. 30.—Dismissing application of S. Marsh, Port Dover, Ont., for order directing Lake Erie & Northern Ry. to provide cattle pass on his farm in Woodhouse Tp., Ont.

24385. Oct. 28.—Amending order 23392, March 4, re perishable freight in heated cars. This order is given in full on another page.

24386. Oct. 25.—Relieving G.T. Pacific Ry. from erecting fences, gates, and cattleguards on certain portions of its main line, mileage 1,044 to 1,363, Winnipeg west.

24387. Nov. 2.—Extending, to May 22, 1916, time within which Lake Erie & Northern Ry. trains may be operated, for construction purposes only, over crossing of Toronto, Hamilton & Buffalo Ry. in Brantford, Ont.

24388. Nov. 2.—Authorizing C.P.R. to build siding in Ottawa, Ont., crossing Cumberland and Dalhousie Sts. at grade.

24389. Nov. 2.—Amending order 23857, June 14, re highway crossing of Canadian Northern Quebec Ry. on Lot 17, St. Joseph de Deschambault Parish.

24390. Nov. 3.—Extending, to Jan. 1, 1916, time within which C.P.R. shall file plans showing bridge to be rebuilt on Notre Dame St., St. Pie, Que.; work to be completed by May 31, 1916.

24391. Nov. 4.—Authorizing Saskatchewan Government to build highway crossing over C.P.R. Colonsay Branch north of n.e. ¼ Sec. 16-23-25, w. 2 m.

24392. Nov. 3.—Authorizing G.T.R. to build additional track across Ahrens St. and a public lane, in Berlin, Ont.

24393. Nov. 3.—Extending, to May 15, 1916 time within which G.T.R. shall complete highway over its track in Tay Tp., Ont.

24394. Nov. 3.—Authorizing Central Vermont Ry. to rebuild bridge 3, near St. Brigid station, Que.

24395. Nov. 2.—Approving Bell Telephone Co. agreement with Barton & Binbrook Telephone Co., Oct. 20; and rescinding order 6138, Jan. 31, 1909.

24396. Nov. 2.—Approving Canadian Northern Ry. revised location through Secs. 3, 4, and 5, Tp. 35, R. 7, w. 2 m., Sask., mileage 83.99 to 87.71.

24397. Nov. 3.—Ordering Canadian Northern Ry. to repay Loughboro Tp., Ont., \$5,000, being amount paid by the township in consideration of train service for passengers and freight from Sydenham making connection with trains at Harrowsmith every day in week, except Sunday. The full judgment in this matter was given in Canadian Railway and Marine World for Nov., pg. 425.

24398. Nov. 3.—Authorizing correction that Edmonton, Dunvegan and British Columbia Ry. plan should show width of station grounds in s.e. ¼ Sec. 12-62-27, w. 4 m. as 120 instead of 100 ft., and 180 instead of 200 ft.

24399. Nov. 5.—Authorizing C.P.R. to build sidings for M. J. O'Brien at mileage 69.2, Chalk River Subdivision.



24400. Nov. 4.—Dismissing complaint of A. H. Mayland, Calgary, Alta., against extra freight charged by C.P.R. on hogs to Moose Jaw, Sask.

24401. Nov. 5.—Relieving Canadian Northern Ry. from speed restriction of 15 miles an hour over its line from Blaine Lake to Denholm, Sask.

24402. Nov. 4.—Extending for 30 days from date time within which Toronto, Hamilton & Buffalo Ry. may re-arrange bents of timber trestle over Hamilton Radial Ry. at Sherman Inlet, Hamilton, Ont.

24403. Nov. 5.—Authorizing Vancouver, Victoria & Eastern Ry. & Navigation Co. (G.N.R.), to cross Second and Third Sts., Tulameen, B.C., at grade, and build passing track, in addition to other lines; to open up lane 40 ft. wide through Block 2, east of Lots 9 and 14, and lane 20 ft. wide through Block 9, east of Lots 3 and 8.

24404, 24405. Nov. 5.—Authorizing Canadian Northern Ry. to open for traffic its line from Bienfait to Estevan, 9 miles, and from Elrose to Estevan, Sask., 35 miles.

24406 to 24408. Nov. 5.—Approving agreements between Bell Telephone Co. with Lanark & Carleton Counties Telephone Co., Oct. 29th; Rural Telephone Co. of Kitley, Sept. 30, and Bracebridge and Muskoka Lakes Telephone Co., Oct. 22.

24409. Nov. 5.—Authorizing Canadian Northern Ry. to build spur for Canadian Oil Co., Portage la Prairie, Man.

24410. Nov. 5.—Authorizing G.T.R. to build siding and spur therefrom for Maganetawan Tanning & Electric Co., Armour Tp., Ont.

24411. Nov. 5.—Authorizing C.P.R. to build siding for City of Toronto, crossing Mount Stephen St., and roadway east side River Don, at grade.

24412. Nov. 8.—Ordering British Columbia Electric Ry. to install improved type of automatic bell at crossing of Twelfth St., New Westminster, B.C., within 60 days from date, and to maintain bell; 20% of cost of installing bell to be paid out of railway grade crossing fund.

24413. Nov. 8.—Authorizing C.P.R. to build siding for A. Carriere at mileage 71.2, Quebec Subdivision.

24414. Nov. 8.—Authorizing City of Regina, Sask., to connect Regina Municipal Ry. with C.P.R. at intersection of Arcola Ave. and Atkinson St.

24415. Nov. 8.—Approving G.T.R. plan showing interchange tracks proposed to be built at Arnprior, Ont., between G.T.R. and C.P.R.; semaphore to be erected west of C.P.R. switch, at point indicated by C.P.R., at G.T.R. expense, and authorizing building of these tracks across certain streets, in Arnprior.

24416. Nov. 5.—Authorizing Canadian Northern Ontario Ry. to build interchange track for allowing transfer of cars to G.T.R. and vice versa, near Ottawa, Ont.

24417. Nov. 9.—Authorizing Lake Erie & Northern Ry. to erect trolley wire and transmission cable over G.T.R. at mileage 44.3, Woodhouse Tp., Ont.

24418. Nov. 8.—Ordering G.T.R. to divert Kingston Road, the cost of work to be paid, 20% out of railway grade crossing fund, not exceeding \$5,000; \$500 each by Brighton and Murray Tps.; and remainder by G.T.R.; and rescinding order 18447, Dec. 30, 1912.

24419. Nov. 6.—Relieving Canadian Northern Ry. from speed restriction of 25 miles an hour on its line between Saskatoon and Harris, Sask., mileage 0 to 49.4.

24420. Nov. 9.—Authorizing Saskatchewan Board Highway Commissioners to build highway over Canadian Northern Ry. in s.e. ¼ Sec. 34-33-11, w.2.m.

24421. Nov. 5.—Ordering that clause 2 of order 23187, Jan. 18, be struck out, and approving plans of proposed track connection and station facilities at Royston, B.C., for Esquimalt & Nanaimo Ry., and Canadian Collieries, Ltd.

24422. Nov. 8.—Rescinding order 19788, July 10, 1913, authorizing construction, maintenance and operation of spur for Silicate Brick Co., Ottawa, and authorizing G.T.R. to remove it and to discontinue its operation.

24423. Nov. 10.—Recommending to the Governor in Council for sanction, St. Lawrence & Adirondack Ry. lease to New York Central Rd., Sept. 27.

24424. Nov. 10.—Authorizing Waldeck rural municipality, Sask., to build overhead bridge over C.P.R. at road between Secs. 29 and 39-16-11, w.3.m., to be completed by Dec. 31.

24425. Nov. 10.—Relieving G.T.R. from providing further protection at Springhill crossing, King, Ont.

24426. Nov. 10.—Amending order 24142, Sept. 2, re C.P.R. location from Stony Creek to Rogers Pass Tunnel, B.C.

24427. Nov. 10.—Amending order 24392, Nov. 3, re G.T.R. additional crossing of Ahrens St., Berlin, Ont.

24428. Nov. 10.—Approving Central Canada Express Co.'s Standard Mileage Tariff of Maximum Tolls, C.R.C. 1.

24429. Nov. 10.—Approving Central Canada Express Co.'s bylaw, authorizing Peter McArthur to prepare and issue all tariffs of toll for carriage of express.

24430. Nov. 11.—Authorizing British Columbia Public Works Department to build level high-

way over Grand Trunk Pacific Ry. at mileage 88, close to mouth of Zimacord River.

24431. Nov. 10.—Ordering C.P.R. forthwith to floor pens leading to loading chutes, as well as large pen at rear of yard, at Provost, Alta., with old ties covered with cinders.

24432. Nov. 11.—Authorizing C.P.R. to build spur for Borden Condensed Milk Co., Ingersoll, Ont.

24433. Nov. 11.—Relieving Canadian Northern Ry. and C.P.R. from maintaining night signalman to operate interlocking plant in N. W. ¼ Sec. 13-2-8, w.2.m., Sask.

24434. Nov. 12.—Removing speed restriction of 15 miles an hour over Canadian Northern Ry. from mileage 30 to Gravelburg, Sask.

24435. Nov. 10.—Dismissing application of City of Ottawa, Ont., for authority to build double line of 51 in. steel water pipe under C.P.R. Broad St. yard.

24436. Nov. 11.—Authorizing C.P.R. to file tariff to provide for charging of special tolls for detention of cars containing western grain and grain products at Cartier, Ont., for more than 72 hours. This order is given in full on another page.

24437. Nov. 13.—Ordering C.P.R., G.T.R., Canadian Northern Ontario Ry. and Toronto Ry. to pay to City of Toronto their proportions of expense incurred to date on high level bridge over Don improvement and over their respective railways at Queen St. East, upon receipt of monthly certified progress estimate showing amount expended thereon until completed, and rescinding order 24347, Oct. 20.

24438. Nov. 9.—Authorizing Canadian Northern Ry. to connect with C.P.R. near Current River and at Arthur St., Port Arthur.

24439. Nov. 13.—Recommending to Governor in Council for sanction, Ottawa & New York Ry. lease to New York Central Rd., Sept. 27.

24440. Nov. 16.—Suspending, until further order C.P.R. Import Tariff, C.R.C. no. E-3060, from St. John and West St. John, N.B., and G.T.R. Import Tariff, C.R.C. no. E-3280, from Portland, Maine.

General order 153. Nov. 4.—Prescribing certain rules governing any future proposed new issue of the Canadian Freight Classification, or any proposed supplement to issue then current. This order is given in full on another page.

General order 154. Nov. 10.—Ordering that, pending revision of present Canadian Freight Classification, railway companies subject to Board's jurisdiction publish and file commodity tariffs, to apply between all points in Canada, covering cream or milk aerators, agitators, coolers, forewarmers, heaters, pasteurizers, separate or combined, loose or in skids. This order is given in full on another page.

General order 155. Nov. 15.—Ordering that railway companies publish and file amended tariffs showing toll not exceeding 75c for cleaning and disinfecting, or disinfecting any car in which live stock has been carried when work is done by companies. This order is given in full on another page.

## Progress of Rogers Pass Tunnel Construction, Canadian Pacific Railway.

The following table, for which we are indebted to J. G. Sullivan, M.Can.Soc.C.E., Chief Engineer, C.P.R., Winnipeg, shows the progress made from Sept. 30 to Oct. 28, also the total progress to Oct. 28:—

	Progress.	Total.
EAST END.		
Main heading .....	1,049 ft.	10,429 ft.
Main tunnel .....	669 ft.	7,247 ft.
WEST END.		
Main heading .....	1,109 ft.	11,129 ft.
Main tunnel .....	699 ft.	6,110 ft.

**Gross Operating Revenues for August on the large steam railways of the United States, according to the Bureau of Railway Economics, were \$1,191 a mile, an increase of \$17, or 1.3%, compared with Aug., 1914. Operating expenses were \$765, a decrease of \$23, or 3%. Net operating revenue, therefore, was \$426—an increase of \$40, or 10.2%, and operating income was \$375—an increase of \$39, or 11.4%. The gain was, however, to a large extent confined to the eastern and southern districts, the western gaining only 3.9% a mile. The operating ratio for the whole country was 64.2%, compared with 67.1% in Aug., 1914, and 68.8% in Aug., 1913. Considering the three main districts, the respective ratios for Aug., 1915, and Aug. 1914, were as follows:—Eastern, 63.6 and 67.3; southern, 67.6 and 74.1; western, 63.1 and 64.5.**

**Intercolonial Ry. employees have decided to donate a day's pay out of their November pay cheques to the Canadian Patriotic Fund.**

## Canadian Northern Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, for Western Lines, compared with those of 1914-15, from July 1, 1915:

	Gross Earnings	Expenses	Net Earnings	Increase or Decrease
July	\$1,206,100	\$921,000	\$285,100	x\$145,400
Aug.	1,192,800	954,000	238,800	x5,900
Sept.	2,014,600	1,358,900	661,600	1,300
	\$4,413,500	\$3,227,000	\$1,186,500	x\$79,300
Deer.	\$ 688,300	\$ 579,000	\$79,300	

A Decrease.  
Mileage in operation at Sept. 30, 1915, 4,965, against 4,670 at Sept. 30, 1914.

Commencing with October, the figures show the earnings of the entire system, both eastern and western lines.

	Gross Earnings	Expenses	Net Earnings	Increase
Oct.	\$3,678,500	\$2,421,500	\$1,257,000	\$ 537,800
	\$3,678,500	\$2,421,500	\$1,257,000	\$ 537,800
Incr.	\$1,100,200	\$ 562,400	\$ 537,800	

The mileage in operation during October, was 7,280, as compared with 6,886 miles in Oct., 1914.

Approximate earnings for three weeks ended Nov. 21, \$2,396,200 against \$1,571,000 for same period 1914.

## Canadian Pacific Railway Earnings, Etc.

Gross earnings, working expenses, net earnings, increases, or decreases, compared with those of 1914-15, from July 1, 1915:

	Gross Earnings	Expenses	Net Earnings	Increase or Decrease
July	\$7,895,375.47	\$5,094,972.35	\$2,800,403.12	x\$978,042.71
Aug.	8,801,451.52	5,359,136.80	3,442,314.72	79,157.02
Sept.	1,273,165.45	557,864.81	4,475,000.44	678,052.25

\$26,069,992.44 \$16,981,973.96 \$10,088,013.48 x\$5,006,334.44

Approximate earnings for October, \$13,311,000, against \$9,152,000 for October, 1914, and for three weeks ended Nov. 21, \$9,010,000, against \$5,515,000 for same period, 1914.

## Grand Trunk Railway Earnings, Etc.

The following figures show the earnings for the G.T.R. (including the Canada Atlantic Ry.), the G.T.W.R. and the D.G.H. & M.R. for September, compared with those for September, 1914:

	1915.	1914.
Earnings .....	\$3,667,800	\$3,838,250
Expenses .....	2,501,100	2,858,900
Net earnings .....	\$1,176,700	\$ 979,350

	1915.	1914.
Earnings .....	\$ 669,900	\$ 611,450
Expenses .....	445,200	553,450

	1915.	1914.
Earnings .....	\$ 224,700	\$ 58,000
Expenses .....	192,150	223,750

Net earnings .....

Approximate earnings for October, \$4,666,591, against \$4,404,417 for Oct., 1914; and for three weeks ended Nov. 21, \$2,894,364, against \$2,609,224 for same period 1914.

## TRAFFIC RECEIPTS OF THE SYSTEM.

	1915	1914	Incr	Deer.
G.T.R. ....	\$33,045,502	\$35,540,802		\$2,495,300
G.T.W.R. ....	6,241,221	5,908,997	\$212,224	
D.G.H.&M.R. ....	2,272,020	2,107,531	164,489	
Totals. ....	\$41,558,743	\$43,647,330		2,088,587

## Grand Trunk Pacific Railway Earnings.

The approximate earnings of the Prairie Section, 916 miles, for October were \$973,582, against \$454,469 for Oct., 1914. The aggregate earnings for four months ended Oct. 31 were \$1,858,558, against \$1,667,542 for same period, 1914.

**The Glacier House, Glacier, B.C., which is operated by the Canadian Pacific Ry., closed Nov. 14 for the winter. The Mount Stephen House, Field, B.C., remains open all the year round.**



## Board of Railway Commissioners' Judgment on Baggage Rules.

Commissioner McLean, of the Board of Railway Commissioners, gave a decision recently on the proposed rules governing baggage car traffic in Canada, in which he pointed out that what was before the board was the question of the rules, not of rates, carried in baggage tariffs. Following is a summary of the judgment, which was concurred in by Sir Henry L. Drayton, Chief Commissioner; D'Arcy Scott, Assistant Chief Commissioner, and Commissioner Lindsay.

By order 195 of Oct. 17, 1904, wherein approval was given to various forms and regulations used by railway companies, included in which were the rules and regulations for the carriage of baggage. Questions having arisen as to the scope of certain of the rules the whole matter was taken up by the board. The railway companies prepared a revised form of the regulations, which were considered by boards of trade, commercial travellers' associations and other interested bodies throughout Canada, with the result that various amendments were agreed to. The regulations thus revised, and the information collected were then considered at informal conferences with the Board's officers, with the result that agreements were made on a number of matters, and incorporated in a revised proof. The unagreed upon matters were argued before the Board and the present judgment gives the Board's decision. The

matters involved are six in number, and are:

**1. Sample Baggage.** Rule 2, sub sec e. This deals with the question of pentagonal and other irregular shaped sample cases used by commercial travellers. The judgment points out that uniformity of rule, owing to the traffic back and forth between Canada and the United States is desirable, and therefore orders that the Trunk Line rule now adopted and in force in the United States, with the approval of the Interstate Commerce Commission, shall be adopted for Canada. This rule reads: "Trunks or other rigid containers with more than two bulging sides, or with two bulging sides that are not opposite each other, will not be accepted for transportation in regular baggage cars."

**2. Canoes.** Rule 10. The judgment holds that the draft rule providing that canoes not exceeding 18 ft. in length, when accompanied by sportsmen or campers to specified territory, do not form any part of the free baggage allowance, but may be carried in the baggage cars upon payment of charges in accordance with current tariff, is not an unreasonable one. The rule therefore is approved.

**3. Limited Liability** in regard to articles embraced in rules 5(a), 7, 9 and 10. Rule 11. This rule limits the liability of the companies to \$5 on any of the articles named in the four rules mentioned, unless a greater value is declared and extra charges paid at the time of checking in accordance with the carrier's current tariff, and is upheld by the judgment as being a reasonable one.

**4. Miscellaneous Articles.** Rule 12. This rule applies to the carrying as baggage of miscellaneous articles, such as tool chests, invalid's chairs, miner's packs, and so forth, which may be carried as baggage only upon condition that the carrying company is not liable for loss of or damage thereto. What the Board is concerned with, says the judgment, is, has it power to sanction the limitation, and is the limitation a reasonable one? The Board holds that the limitation is a reasonable one, and that it has, under the authority of Sec. 340 of the Railway Act, power to approve such limitations.

**5. Storage.** Rule 23 (d). This applies to the limitation of liability of the railway company as a carrier when the baggage is placed in storage. The judgment directs that the rule shall be rewarded as follows: "After the expiration of 24 hours from the receipt of such baggage or articles in storage, the carrier shall be liable as a warehouseman only."

**6. Baggage checked to other companies' lines.** Rule 26 (c). The proposed rule provided that the liability of carriers for loss of baggage or other articles checked shall cease so soon as it shall have been delivered to the next connecting carrier, but the judgment directs that a new rule shall be substituted making the original carrier, other than the Canadian Government Railways, liable for the loss or damage occasioned on the connecting line in Canada to which the baggage, etc., has been delivered, to the extent provided for in the rules, but gives to the original checking line the right to recover the amount of such loss or damage from the connecting company.

## Canadian Overseas Railway Construction Corps.

A nominal roll of officers, non-commissioned officers and men has been issued with militia orders. Following is the list of officers:

Name.	Former Corps.	Next of Kin.	Address of Next of Kin.	Country of Birth.	Taken on Strength.	
					Place.	Date.
Major..... Ramsey, Colin Worthington Pope.	Territorials.	Ramsey, Florence E.	Montreal .....	Canada..	Montreal .....	June 12, 1915
Major..... C. of G. .....	C. of G. .....	Hervey, Mrs. E. G.	Lancaster, Ont. ....	U.S.A....	Montreal .....	Mar. 23, 1915
Major..... Le Fevre, Alfred Tully .....	58th Regt. ....	Le Fevre, Mrs. G. .....	Lakefield, Ont. ....	Canada..	Montreal .....	Mar. 23, 1915
Major..... Reid, John Garnet .....	97th Regt. ....	Reid, Mrs. Annie M. ....	S. S. Marie, Ont. ....	Canada..	St. John .....	Mar. 17, 1915
Major..... Richardson, Bertram Poidevin. ....	S.A.C. ....	Ridgeway, Ethel M. ....	Montreal .....	England.	Montreal .....	Mar. 17, 1915
Captain..... Grant, LeRoy Fraser .....	C. of G. ....	Grant, Mrs. C. McL. ....	Vancouver .....	Canada..	St. John .....	Feb. 19, 1915
Captain..... Hillman, Daniel .....	Nil .....	Hillman, William J. ....	Clachan, Ont. ....	Canada..	Montreal .....	Mar. 27, 1915
Captain..... Pettman, Frank Ernest .....	Nil .....	Pettman, Mrs. A. ....	E. Wellington, B.C. ....	Canada..	St. John .....	Mar. 31, 1915
Captain..... Pope, John Henry .....	7th Hussars. ....	Pope, Florence E. ....	Calgary, Alta. ....	Canada..	Montreal .....	Mar. 17, 1915
Captain..... Wellwood, Henry .....	38th Regt. ....	Wellwood, Jessie E. ....	Milton West, Ont. ....	Canada..	St. John .....	Mar. 31, 1915
Lieutenant..... Connors, Francis Bernard .....	90th Regt. ....	Connors, Miss K. J. ....	Winnipeg .....	Canada..	St. John .....	Mar. 26, 1915
Lieutenant..... Duncan, Erskine .....	Territorials. ....	Duncan, Mrs. A. C. ....	Belfast, Ire. ....	Scotland.	Cornwall .....	Mar. 20, 1915
Lieutenant..... Flint, Charles .....	Nil .....	Flint, Mrs. E. A. ....	Winnipeg .....	Canada..	Calgary .....	Apr. 10, 1915
Vet. Lieutenant..... Heenan, James Havelock .....	Nil .....	Heenan, Mrs. D. C. ....	Roland, Man. ....	Canada..	Calgary .....	June 12, 1915
Lieut., Asst. Adjt. Lewis, Robert Percy .....	90th Regt. ....	Lewis, Mrs. Margt. ....	Winnipeg .....	England.	Winnipeg .....	Mar. 23, 1915
Lieutenant..... MacCrimmon, Henry James .....	Nil .....	MacCrimmon, Don. ....	Williamstown, Ont. ....	Canada..	Williamstown. ....	Mar. 20, 1915
Lieutenant..... Murray, Wm. Henry Douglas .....	58th Regt. ....	Murray, Mrs. M. W. ....	Bridge of Weir, Scot. ....	Scotland.	Montreal .....	Mar. 23, 1915
Lieutenant..... Ramsay, Kenneth Allan .....	R.M.C. ....	Bullen, Mrs. C. F. ....	Winnetka, Ill. ....	Canada..	St. John .....	June 7, 1915
Lieutenant..... Sherwood, Henry Lewis .....	R.M.C. ....	Allan, William A. ....	Ottawa .....	Canada..	Montreal .....	Mar. 18, 1915
Lieutenant..... Turbett, Eyre Anthony Weldon. ....	Imp. Forces. ....	Turbett, Mrs. G. W. ....	Dublin, Ire. ....	Ireland..	St. John .....	June 8, 1915
Lieutenant..... Wilson, LeRoy Zimmerman .....	C.E. ....	Wilson, Mrs. S. A. ....	Brampton, Ont. ....	Canada..	St. John .....	Mar. 26, 1915

The list also contains the names of 505 non-commissioned officers and men divided as follows: Co. Sergeant Majors, 2; Quartermaster Sergeant, 1; O.R. Sergeant, 1; P.M. Sergeant, 1; Sergeants, 6; Lance Corporals, 24; Corporals, 31; Sappers, 10; Privates, 429.

Capt. H. Wellwood, who returned to Montreal recently to obtain 120 railway men as a reinforcing draft for the original corps, is credited by the Montreal Star with stating that the corps' principal work in Belgium had been the building of a narrow gauge railway behind the first line of trenches extending the whole length of the Belgian front. The train is drawn by a 7 ft. gasoline engine, the cars being just over 3 ft. high. Everything is painted the color of the earth, and when a German flare lights up the locality the train comes to a sudden stop and is practically invisible. By this train food and munitions and everything needed in the trenches is conveyed during the night. One section the Canadians built was over flat country five miles in extent, and they were much exposed to shell fire, but as they only worked at night the casualties were

few. The corps was also engaged in the construction of concrete emplacements for guns in the trenches, and these have been so strongly constructed that when the big Allies drive took place the Germans shelled vigorously the Belgian lines, as a counter-stroke, but the concrete and steel hoods, covered with loose earth and boulders, withstood all the explosives that were hurled against them and as the machine guns covered every possible avenue of approach the Germans had no chance of reaching the Allied lines.

From the last reports received the corps is at Longmoor Camp, Aldershot, Hampshire, England, where it has been since its return from Belgium. It is reported that 13 of the men were admitted to the hospital recently, on account of injuries received on the Woolmer Military Ry. Lt.-Col. Ramsey

has cabled for 20 additional men to replace casualties, discharges, etc. The corps has been highly complimented and mentioned in battalion orders for the excellent work done abroad, and on Nov. 1 it was announced that it was again under orders for foreign service, and reports stated that work was to be undertaken either in Russia or in the Persian Gulf territory.

A draft of 120 men has been recruited in Canada with two officers, to form a reserve base in England for reinforcements. The two officers selected are H. A. Lumsden, A.Can.Soc.C.E., who has been in England with the 19th Battalion, Canadian Expeditionary Force, for some time, and H. B. Sims, M.Can.Soc.C.E., formerly Assistant Division Engineer, C.P.R., Vancouver, B.C. The draft will go to England in charge of Capt. Wellwood and Sergt.-Major Wood.



# Flag Protection of Track Under Repairs, Etc.

By C. Murphy, General Superintendent, Manitoba Division, Canadian Pacific Railway.

It is not my intention to go into statistics or history in connection with railway operation, but merely to mention some new difficulties that have arisen in recent times which go to increase the cost of operating a railway, and at the same time try and provide material for discussion. Everybody is familiar with the rapid and wonderful development in transportation in Canada; I, therefore, need only mention that the latest authentic figures available show that up to the middle of 1914 there were 30,795 miles of railway in Canada, capitalized at \$1,808,820,761.

Passengers carried, 1891 ..	13,222,568
Passengers carried, 1913 ..	46,230,765
Tons of freight handled	
1891 .....	21,753,021 tons
Tons of freight handled	
1913 .....	106,992,710 tons

Notice the enormous increase in twenty years. The cost of transportation has naturally gone up during the same period, and the present is probably the most trying time in the history of Canadian railways and for the operating officer. Earnings until recently were going down and operating expenses going up, presenting a problem that has been giving no little concern. As an illustration, the gross earnings of the railways in Canada in 1913 were \$218,660,000. In 1914 they had dropped to \$176,446,000, a decrease of \$42,214,000. The increases in operating expenses are many and varied, and in some cases are forced on the railways without any apparent benefit or safety over present methods.

With a view of prompting discussion or an expression of opinion, I will quote a communication sent in May by the Board of Railway Commissioners to the different railways in Canada under their jurisdiction, with reference to the adoption of certain flagging rules for track protection, the same being a report by the Board's Chief Engineer and Chief Operating Officer:—

"In order to bring about uniform practice and understanding on all railways under the Board's jurisdiction, we recommend that both the railway companies and the employees, maintenance and operating, be furnished with a copy of the following regulations, and that they be asked to show cause why an order should not go putting the same into effect:

"(a) On all lines over which trains are operated at a speed of 25 miles or more per hour, where defects in the track, obstructions, or any other cause render it impassable, or during the time repairs are being made which render it impassable, and until such time as the movement of trains may be resumed at such places, a man shall be employed to flag all trains, in each direction; which flagman shall be required to carry out all the provisions of rule 99.

"(b) On all other lines protection at such places as mentioned in the preceding paragraph shall be provided in both directions as follows: A red flag by day and, in addition, a red light by night or when weather or other conditions obscure day signals, must be first fixed where it can be seen by the foreman in charge of the work, clear of passing trains, 6 ft. above rail level, on the same side of the track as the engineer of an approaching train, and where it will be clearly in his view, 1,200 yards (24 telegraph poles) if no down grade, and, if there is a down grade within one mile, 1,800 yards (36 telegraph poles) from the defective point, or as much further as may be necessary to insure full protection, with two torpedoes placed on the rails opposite to each other,

so as to make one explosion, 100 yards beyond the red signal. (If the alignment and view are such that a clear view of the signal cannot be maintained by the foreman, a man shall be employed to flag all trains, as set out in paragraph (a).

"(c) A train stopped by these signals shall be protected immediately as required by rule 99, sound whistle signal 14m, and wait until a signal to proceed is given by the foreman in charge of the work. The crew of a train so stopped shall replace the two torpedoes on the rails opposite each other, 100 yards from the red signal.

"(d) Flags for track protection shall not be placed between main tracks of double track lines, or where two separate lines of railway or two subdivisions of the same railway are parallel and close together.

"(e) The railway companies shall have examinations made from time to time to see that the regulations herein required are being carried out and observed.



C. Murphy.  
General Superintendent, Manitoba Division,  
Canadian Pacific Railway.

"(f) The operative part of this order shall be printed in the timetable instructions for the guidance of enginemen and trainmen."

The above communication was dealt with at a joint meeting of all the railways held in Toronto in July last, and after considerable discussion, it was recommended that the following communication be addressed to the Board of Railway Commissioners:—

"Referring to the joint report of the Board's Chief Engineer and Chief Operating Officer, and the new rules recommended therein in connection with the protection of track which may be broken or obstructed while under repairs, or other causes, this matter is one of vital importance to all railway companies in Canada, and as the recommendation involves a very drastic change in the practice of all such companies, it was deemed advisable to have the whole question submitted for consideration to a joint conference of the representatives of the various railway companies affected. The representatives appointed by the various companies have conferred in regard to

the matter and have most carefully considered the recommendations made in the above mentioned report. The result of these conferences has been that, while the representatives of the various companies felt confident that the records of operation on their respective lines show conclusively that the various practices followed by the companies have afforded assurance of safe operation, yet it was recognized that the desire for uniformity was reasonable. However, we believe that it is not practical to have the difference in flagging rule based upon differing speed of trains, because it is well known that such speed is subject to great variation on different portions of practically all lines of railway, whether they are branch lines or main lines, and moreover the section foreman is not in a position to know what speed any particular train will make. It is submitted that the proposed rule, B, recommended by the Board's officers would be practically inoperative, as at times trains run at a speed of 25 miles an hour or more on all lines. In lieu of the rules suggested, the following rules are respectfully submitted as affording a more practical method, and one which will insure safety of operation:—

"When the track is found impassable, due to any obstruction or defect, or if it is necessary to protect the track for the purpose of making repairs or renewals which require trains to stop, trains must be protected in the following manner:

"1. A flagman must be sent in each direction with proper signals, who will place at a point 3,600 ft. from the obstruction a yellow flag by day, and, in addition, a yellow light by night, beside the track on the same side as the engineer of an approaching train, so that it will be clearly in his view; and,

"2. Place two torpedoes not more than 200 ft. nor less than 100 ft. apart on the rail on the same side as the engineer of an approaching train, 300 ft. in advance of the yellow signal; and

"3. Then return to a point not more than 600 ft. from the obstruction and as much nearer as necessary to bring the signal within the vision of the foreman, and place a red flag by day, and in addition a red light by night, beside the track on the same side as the engineer of an approaching train, so that it will be clearly in his view; and

"4. Place two torpedoes on the rails opposite each other so as to make one explosion 150 ft. in advance of the red signal.

"The flagman may then return to assist in the work. When weather, or other conditions, obscure day signals, night signals must be used.

"A train finding a yellow signal displayed as above must observe rule 35 and run expecting to find a red signal displayed 3,000 ft. distant, in which case the train must stop before the engine passes such signal, and must not proceed until a proper signal is received from the point where work is being performed. Failing to find a red signal at such point indicated, the train must run at a speed not exceeding six miles an hour until a proceed signal is received or a green signal is found displayed on the engineer's side beyond the point where the obstruction existed.

"If torpedoes so placed are exploded while protection continues necessary, foreman must see that they are promptly replaced.

"If, for any reason, it is considered necessary to provide other protection, first send a flagman out in each direction with stop signals at least 1,500 ft. in day time, if there



down grade towards the obstruction within one mile and there is a clear view of the obstruction from an approaching train, 3,600 ft. at other time and places, if there is no down grade towards the obstruction within one mile, 1,200 ft. if there is a down grade towards the obstruction within one mile.

The flagman must, after going the required distance from the obstruction to insure full protection, take up a position where there will be an unobstructed view of him from an approaching train of, if possible, 1,500 ft., first placing two torpedoes (not more than 200 nor less than 100 ft. apart) on the rail on the same side as the engineer of an approaching train, 300 ft. beyond such position. The flagman must remain in such position until recalled or relieved.

"We feel confident that, after careful consideration of these rules, the Board's officers will agree that they will be found more workable, and at the same time quite as efficient as those recommended by them. Will you be good enough to submit this communication to the Board. If a further hearing is deemed advisable, we shall be glad to arrange for representatives of the various railway companies to be present."

It will readily be seen that if the Board's suggestion was put into effect it would mean additional men to about every three or four miles of railway, which would be no small amount in increased operation, and with, in our opinion, no increased safety or efficiency. I feel safe in saying, and without fear of contradiction, that we have had less trouble on our railways under our present method of flag protection for track than we have had under man protection, and I am of the opinion that conditions do not warrant any increase in expense such as would be involved by additional men. There may have been failures on the part of men to observe the rules and the signals, but that is a failure of the human element, not of the rules or regulations. It is admitted that up to the present time no rules or regulations have yet been adopted that will avoid failure of the human element.

The foregoing paper was read before the Western Canada Railway Club in Winnipeg recently. In the subsequent discussion a number of questions were asked which Mr. Murphy replied to as follows:—

It is proposed to use the present red, green and yellow flags, and it has been suggested that a flag be placed on two sticks, so that it will always be fully exposed, at right angles to the track. It was the unanimous opinion of the railway representatives at the meeting referred to that a perfectly safe method of flagging on double track, where traffic runs to the left, is as follows:—"On double track, where movement of traffic is to the left, two flags and two lights shall be placed, one on each side of the track to be protected; flags or lights so placed will not affect movement of trains on opposite track."

Rule 35 fully protects a track which has been damaged, but if the proposed rules are adopted, the flagging rules, so far as placing flags on the track is concerned, will be eliminated, and the protection given only by a man. In cases of emergency it would be hard to divide the man up, so that he could flag both ways. Under our present rules he can place his flags in one direction and take necessary steps to protect a train in the other direction.

I cannot recall a single case where an accident has happened under the present system of flagging, as the result of a flag being blown down. There is no difficulty in arranging for a flag to be put up so that it will not be blown down, and in addition to the flag you have the torpedoes on the track. I can, however, recall a case of man failure. Of course, there are times when

conditions are exceptional and rules call for exceptional precautions to be taken, and these would fully cover any cases that have so far arisen.

The Priest flanger, where it is used, is usually on some isolated branch line, but, I think, the cases where the flanger, throwing the snow up and covering the glass with steam, so as to hide the flag from the locomotiveman, would be few and far between. If the weather should be stormy or exceptionally unfavorable conditions apply, exceptional precautions could be taken. Occasionally conditions will occur that it is hard to surround with any rules or regulations.

Very often flags are not left out for the protection of a train when it stops on the main line, but only a torpedo, and that is considered ample protection under the circumstances. I think the rules are perfectly safe under these circumstances, and I do not see that there are any conditions that would make it different in the case of slow track.

We have all heard of cases where trains have been struck on account of not observing the rules, and we will undoubtedly have such cases so long as we are depending on the human element against failure, as we find in most cases it is this and not the rules that cause the trouble. I believe our present method of flagging is perfectly safe, and what is required is a generous application of efficiency testing to keep the men up to the mark in the observance of the rules.

I am not aware of any precedent established on United States lines to warrant bringing forward such a proposition as was made by the Board of Railway Commissioners' officers. To carry out the proposal as outlined would mean an enormous additional expense, and we all know that the railways cannot stand much more of that just now.

The operation of railways is one of the greatest questions before railway people and the public. The operating end is so dovetailed in with other departments that you can hardly find where it begins and ends, and for this reason I am of the opinion that the superintendent of a district should be the head of every department touching the operation of the line. It is only by this means that the different departments can be handled to the best advantage to all concerned.

### Rates on Asbestos Sand from Quebec to Ohio.

In the case of Philip Carey Mfg. Co. et al vs. Grand Trunk Western Ry. et al, it was complained, in April last, that rates on asbestos sand in carloads from Robertson, Thetford, and Sherbrooke, Que., to Lockland and Rockdale, Ohio, are unreasonable and unjustly discriminatory. Following is a summary of the Interstate Commerce Commission's decision given recently:—

Rates in question do not conform to the general adjustment of rates between the Canadian territory of origin and the group in which these destinations are located; the rates on asbestos sand to Rockdale and Lockland are higher than from the same points of origin to Chicago and Milwaukee, while the rates on asbestos fibre from the same points of origin to Rockdale and Lockland are lower than from the same points of origin to Chicago and Milwaukee, the fibre being a lighter loading commodity and much more valuable than the sand. The rates attacked are therefore unjustly discriminatory against complainants.

Following International Paper Co. v. D. & H. Co., 33 I.C.C., 270, and cases therein cited, the Commission's jurisdiction in connection with transportation to or from an adjacent foreign country is over that portion of the

transportation within the confines of the United States. The Commission cannot, therefore, prescribe joint through rates from points in Canada to points in the United States, but it can control the rates which the lines in the United States charge for services rendered within the United States. Joint rates from and to points in Canada are a convenience to the public and the shippers and should be encouraged. It is therefore expected that the defendants will comply with the finding that the rates to Lockland and Rockdale are unjustly discriminatory to the extent that they exceed the rates contemporaneously maintained to Chicago or Milwaukee by proper readjustment of the present joint through rates. If this is not done an order will be entered requiring the defendants that are subject to our jurisdiction to establish in lieu of the present rates joint or local rates from the ports of entry in the United States to Lockland and Rockdale which shall be no higher than those contemporaneously maintained to Chicago or Milwaukee.

W. H. Biggar, K.C., and E. W. Beatty, K.C., represented the Grand Trunk and Canadian Pacific respectively before the Commission.

### Corrections for the Erring.

Some of the United States railway publications get badly tangled up occasionally in their references to Canadian railway matters. For instance, *Railway Engineering & Maintenance of Way* in its last issue published some biographical information about W. A. Cowan, A.M. Can. Soc. C.E., who it says has been "recently appointed Division Engineer of the Canadian Northern Railways at Cochrane, Ont.," and further on it states that in 1914 he was appointed "Resident Engineer of the Canadian Northern Ry. at Truro, and held that position until his recent appointment as Division Engineer of the National Transcontinental Ry." Of course there is no "Canadian Northern Railways," but there is the Canadian Northern Railway, which, however, goes nowhere near Cochrane, and Mr. Cowan is not in its service. Nor was he in its service at Truro, N.S., for a similar reason, viz.: that the C.N.R. has no line in that vicinity, but he was until recently Resident Engineer, Intercolonial Ry., at Truro, and is now Division Engineer, National Transcontinental Ry., at Cochrane, as announced in *Canadian Railway and Marine World* for July.

*Railway Engineering & Maintenance of Way* also states that H. MacLaren has been appointed recently "Division Engineer of the Toronto District of the Canadian Northern Ry. at North Bay, Ont.," and in the same paragraph it says that "he succeeds in the Toronto District J. D. Evans, transferred." H. MacLaren has not been appointed Division Engineer at North Bay and the Canadian Northern's Toronto Division or District does not include North Bay. He has not succeeded J. D. Evans in the Toronto District, for the simple reason that Mr. Evans was formerly Division Engineer of the Ottawa District at Trenton, and not of the Toronto District. And further, there is no H. MacLaren in the C.N.R. service as Division Engineer. G. P. MacLaren is Division Engineer of the Toronto District, with office at Rosedale, as announced in *Canadian Railway and Marine World* for October.

The charges against the Canadian Northern Ry. for contravening sections of the Saskatchewan Liquor Act were withdrawn Oct. 29, as it was shown that the company was making every effort to install the necessary signs in its cars as quickly as possible.



## Sale of Canadian Northern Railway Tickets at Toronto Union Station.

Sir Henry L. Drayton, Chief Commissioner, Board of Railway Commissioners, gave the following decision, Nov. 18: This is an application made by the Canadian Northern Ry. for an order requiring the Grand Trunk Ry. to allow the Canadian Northern to have the privilege of having its tickets on sale at the ticket office operated by the Grand Trunk and Canadian Pacific jointly, on the train floor in the Union Station, Toronto. The G.T.R. opposes the application. In that company's answer it points out that the Canadian Northern has a ticket office on the main floor of the Union Station, and submits that that is all that the Union Station management is required to furnish. The Grand Trunk admits that there is an office on the train floor, jointly maintained by the Grand Trunk and Canadian Pacific Railways, which is principally used for selling tickets to passengers on through journeys who have not been able to buy through tickets at local stations. The Grand Trunk also states that no doubt the Union Station managers would make an effort to supply similar accommodation to the Canadian Northern, if it really needed it, if there was assurance given of payment for the service rendered. The answer further points out that the Canadian Northern is now indebted to the Grand Trunk for about \$260,000, and that the Canadian Northern owes the Toronto Union Station management \$5,090, which constitutes four months' arrears for services in the Union Station.

Unquestionably there are passengers who have only purchased tickets locally to Toronto. Ordinarily speaking there is no reason why these people should not receive exactly the same facilities as passengers on other roads similarly situated. There is no doubt at all as to the inconvenience of having to leave the train shed and go to the rotunda, in view of the manner in which the present Union Station is laid out. It is also obvious, that in case of a close connection, passengers having to do this may be so delayed as to lose their trains, or leave baggage behind unchecked. There is also no doubt that, to some extent, the Canadian Northern suffers, as tickets might well be required for competitive points; and, in the absence of C. N.R. tickets on sale in the train shed, there is not much doubt that the traveller would buy his ticket on the competitive line rather than go to the ticket office on the main floor. I have no doubt that the service is one properly required both in case of the public and in the interests of the Canadian Northern. The best proof that the service is necessary as a convenience is to be found in the fact that the Grand Trunk and Canadian Pacific Railways have, of their own motion, found it necessary to install it for themselves. I am of the opinion that this office should sell tickets for the Canadian Northern in the same manner as it now sells tickets for the two other railways, and should exchange Canadian Northern tickets for orders, as is now done for the other lines. There is no doubt that the Canadian Northern should pay for what it gets. It may well be that the Grand Trunk, on account of the condition of accounts between it and the Canadian Northern, can reasonably object to entering into any joint arrangements or extending any further credit to the Canadian Northern. The cost, however, of this service cannot be great; and the Grand Trunk should give the necessary instructions so that the men now selling tickets for the Canadian Pacific and Grand Trunk in the trainshed ticket office will

perform like duties for the Canadian Northern. The added cost will be practically nothing. Nothing has been said by the Grand Trunk on the question of remuneration. Under the circumstances, the Canadian Northern will pay one-third of the cost of operating the office to the extent of the actual salaries and out-of-pocket expenses. In view of the small amount of business of the Canadian Northern, no rental charges are to be included in the expenses that company contributes to. This apportionment of cost made as it is without full or proper information, is tentative, and if objected to by either party, the question will be listed for hearing and final determination.

The Assistant Chief Commissioner, D'Arcy Scott, concurred. Commissioner McLean said: The dilatoriness shown by the Canadian Northern in settling its outstanding accounts with the Toronto Union Station management makes me hesitate in agreeing to an arrangement which may enable the railway to owe some more money. At the same time there is a public need which justifies some such arrangement as is recommended and this public need must be considered. But, if this need is to be met in the way requested by the Canadian Northern, the continuance of the arrangement should be contingent on prompt adjustment by it of its share of the expense attaching to the arrangement.

**Proposed Railway Across Nicaragua.**—A press dispatch from Washington, D.C., states that a representative of a Canadian firm, with headquarters in Winnipeg, was recently in Managua, to discuss with the Nicaraguan President the possibility of obtaining a concession to build a railway across the isthmus through Nicaragua, and that it was decided not to grant such a concession at present.

## Grand Trunk Railway Fire Brigade Competitions.

W. D. Robb, Superintendent of Motive Power, G.T.R., announces that two of the annual fire brigade competitions for employees have been won this year by the car shops men at London, Ont. The company has employees' fire brigades at the various main repair shops, locomotive house terminals and other large buildings. The organization comprises hose and hook and ladder companies, the members of which are supplied with coats, helmets, rubber boots, etc. The men are regularly drilled and reside within easy distance of the shops in order that they can respond promptly to an alarm. The company recognizes the work of the men composing these fire brigades in many ways, granting additional free transportation to themselves and families and awards prizes in the annual competitions amounting to \$250. The "dry" race was won this year by no. 2 company of the car shops at London, and they were also winners in the "wet" race. The hook and ladder race was won by a Montreal team from the car department.

**Passenger Meetings at Buffalo.**—The Great Lakes and St. Lawrence River Rate Committee, International Water Lines Passenger Association, and Niagara Frontier Summer Rate Committee, will meet at Hotel Iroquois, Buffalo, N.Y., in January. The Niagara Frontier Summer Rate Committee's rate representatives will meet on Jan. 4 and 5 at 9 a.m. for compilation of fares, etc. The general meeting will be on Jan. 6 at 10.30 a.m. The Great Lakes and St. Lawrence River Rate Committee will meet immediately following the adjournment of the Niagara Summer Rate Committee meeting.

## Grain in Store at Terminal Elevators, Interior Terminal Elevators and at Public Elevators in the East.

Week ending Nov. 12, 1915.	Wheat, bushels.	Oats, bushels.	Barley, bushels.	Flax, bushels.	Totals, bushels.
Fort William—					
C.P.R. ....	3,121,222	427,512	81,476	24	3,630,234
Consolidated Elevator Co. ....	954,905	210,937	18,378	15,965	1,230,185
Empire Elevator Co. ....	1,527,129	160,453	51,339	96,793	2,135,714
Ogilvie Flour Mills Co. ....	975,530	64,286	34,343		1,074,159
Western Terminal Elevator Co. ....	1,303,815	143,746	13,101	73,093	1,533,755
G.T. Pacific ....	2,853,476	687,533	42,030	55,431	3,638,470
Grain Growers' Grain Co. ....	1,735,673	256,852	37,023		2,029,548
Fort William Elevator Co. ....	627,815	280,489	35,051	14,989	958,344
Eastern Terminal Elevator Co. ....	876,776	179,075	31,782		1,087,633
Port Arthur—					
Port Arthur Elevator Co. ....	2,659,651	758,405	104,611	62,435	3,585,102
D. Horn & Co. ....	277,950	78,591	42,938	28,887	428,366
Dominion Government Elevator ....	1,317,106	465,682	39,505	72,300	1,894,793
Grain afloat ....					
Total Terminal Elevators ....	18,231,048	4,013,561	531,577	450,117	23,226,303
Calgary Dom. Govt. Elevator ....	12,334	38,637	1,572		52,543
Saskatoon Dom. Govt. Elevator ....	160,507	5,414		2,126	168,047
Moosejaw Dom. Govt. Elevator ....	47,990	7,391	344	2,699	58,424
Total Interior Term'l Elevators	220,831	51,442	1,916	4,825	279,014
Depot Harbor ....					
Midland—					
Aberdeen Elevator Co. ....	414,747				414,747
Midland Elevator Co. ....					
Tiffin, G.T.P. ....	1,151,618	20,000	55,175		1,226,793
Port McNicoll ....	660,763	595,459	2,723		1,258,945
Collingwood ....	11			*1,947	1,988
Goderich ....	462,035	63,930		22,344	528,309
Kingston—					
Montreal Transportation Co. ....		246,581			246,581
Commercial Elevator Co. ....	3,160	114,729			117,889
Port Colborne ....	809,887	28,525		8,920	847,332
Prescott ....					
Montreal—					
Harbor Commissioners No. 1 ....	771,915	262	1,890		777,067
Harbor Commissioners No. 2 ....	898,143	573,168	1,255		1,472,566
Montreal Warehousing Co. ....	307,369	70,285			377,654
Quebec Harbor Commissioners ....	3,509	6,574			10,083
West St. John, N.B. ....	14,903				14,903
Halifax, N.S. ....					
Total Public Elevators	5,498,090	1,744,513	64,043	31,264	7,337,910
Total Quantity in Store	23,949,969	5,800,516	597,536	486,396	30,834,417
*Corn.					



# Mainly About Railway People Throughout Canada.

Sir H. Montagu Allan has been elected Vice President, Royal Trust Co., succeeding the late Sir William Van Horne.

F. W. Peters, General Superintendent, British Columbia Division, C.P.R., has been elected President of the Vancouver Canadian Club.

J. McNaught, Solicitor, C.P.R., Montreal, was presented with a purse of money on leaving for England to enlist for active service.

H. W. Mudge, formerly President, Rock Island System, has been elected President of the Denver & Rio Grande Rd., succeeding B. F. Bush.

Sir Henry L. Drayton, K.C., Chairman, Board of Railway Commissioners, has been elected a member of the Imperial Society of Knights Bachelor.

E. T. Slocum, of Detroit, Mich., who is said to have been one of the original directors of the Canada Southern Ry., died there Nov. 21, aged 76.

H. Hulatt, Manager of Telegraphs, G.T.R. and Grand Trunk Pacific Ry., Montreal, has been elected a director of the Grand Trunk Pacific Telegraph Co.

A. W. Smithers, Chairman, G.T.R. and Grand Trunk Pacific Ry., sailed from Montreal, Nov. 26, for England, after completing his annual visit to Canada.

Lieutenant G. S. Boyle, reported, Nov. 15, to have died of wounds received in the Dardanelles district, was formerly on the Intercolonial Ry. engineering staff.

Lieutenant S. L. Cullen, of the C.P.R. Publicity Department, Montreal, was presented recently with a silver cigarette case by the staff, on leaving for active service.

Baron Welby, who died in England, Oct. 30, aged 83, was for many years prominent in financial circles in London, and was for some time a director of the Grand Trunk Ry.

B. T. Chappell, heretofore Superintendent, Canadian Northern Ry., Saskatoon, Sask., was given a presentation by business men there on being transferred to Vancouver, B.C.

Count Jacques de Lesseps, who is a son in law of Sir Wm. Mackenzie, President, Canadian Northern Ry., has been awarded the French military cross for valor in aviation work.

L. W. Baldwin, formerly General Superintendent of all Illinois Central Ry. lines south of the Ohio River, has been appointed General Manager of the Central of Georgia Ry., at Savannah.

Lady and Miss Van Horne, who spent several weeks at their place, Covenhoven, St. Andrews, N.B., after Sir William's death, returned to their town house in Montreal early in November.

The name of the C.P.R. station, formerly called Muskoka, Ont., 23 miles south of Parry Sound, has been changed to MacTier in honor of A. D. MacTier, General Manager Eastern Lines, C.P.R.

J. W. Stewart, President, Pacific Great Eastern Ry., returned to Vancouver, B.C., towards the end of October, after an absence of three months, during which he visited his early home in Scotland.

J. S. Dennis, Assistant to the President and in charge of the National Resources Department, C.P.R., Calgary, Alta., has been elected First Vice President of the International Irrigation Congress.

E. J. Chamberlin, President, G.T.R., and Grand Trunk Pacific Ry., has been elected a director of Molson's Bank, in place of D.

McNicoll, formerly Vice President, C.P.R., who retired owing to ill health.

F. J. Moss, who is stated in a cablegram to have been Canadian Northern Ry. Emigration Agent at London, Eng., is said to have been placed on the Canadian Pay and Record Office staff at Westminster.

F. C. Salter, European Traffic Manager, Grand Trunk Ry., London, Eng., was one of the speakers at the installation of Dr. Lewis Hunt, a former Nova Scotian, as Mayor of Richmond-on-Thames, Eng., November 9.

The Sydney, N.S., house of J. H. Plummer, President, Dominion Steel Corporation, Sydney and Louisburg Ry., and Cumberland Railway and Coal Co., was totally burned Nov. 10. Mr. Plummer is ill at his Toronto house.

R. L. Latham, Chief Engineer, Toronto, Hamilton & Buffalo Ry., Hamilton, Ont., and L. E. Silcox, Division Engineer, Hudson Bay Railway, Winnipeg, have been elected mem-



W. P. Hinton.  
Traffic Manager, Grand Trunk Pacific Railway and Grand Trunk Pacific Coast Steamship Co., and Western Traffic Manager, Canadian Government Railways.

bers of the American Railway Engineering Association.

Major George Janin, M.Can.Soc.C.E., City Engineer of Montreal, who commanded a corps of engineers which he raised for war service, was drowned when the hospital ship Anglia was sunk in November by striking a mine.

The Vancouver Board of Trade on Nov. 14 expressed regret at the resignation of G. E. Graham, as Vice President, on account of his removal to Kentville, N.S., where he has been appointed General Manager, Dominion Atlantic Ry.

J. K. L. Ross, one of the C.P.R. directors, applied on behalf of the estate of his late father, James Ross, for \$500,000 of the Dominion war loan issued in November. Sir Herbert Holt, another C.P.R. director, applied for \$100,000.

W. A. Mason, a G.T.R. ticket agent at Toronto, was committed for trial at Toronto, Nov. 16, on a charge of the theft of \$1,500, received for the sale of tickets and unac-

counted for. He pleaded not guilty and was granted bail of \$3,000.

R. W. Burnett, formerly General Master Car Builder, C.P.R., Montreal, is now Vice President, National Car Equipment Co., 339 Railway Exchange, Chicago, Ill., which handles various railway specialities and represents the Falk Co., Milwaukee, Wis.

Sir Thomas G. Shaughnessy, President, Canadian Pacific Ry.; Sir William Mackenzie, President, Canadian Northern Ry., and Sir Henry L. Drayton, Chairman, Board of Railway Commissioners, attended Sir Charles Tupper's funeral in Halifax, N.S., Nov. 15.

Lt. Col. Wm. Hendrie, of Hendrie & Co., Ltd., Hamilton, Ont., cartage contractors, G.T.R., who went overseas in 1914 as Major of the 48th Highlanders, has returned to Canada. He served recently in the Remount Department in France and England.

H. Le Jeune, formerly of the C.P.R. Hotel Department, who was stricken with paralysis at Winnipeg, Sept. 9, and was removed on Oct. 19 from the Royal Alexandra Hotel, where he had lived for several years, to St. Boniface Hospital, died Nov. 22, aged 71.

Lord Strathcona's will filed recently for probate in Ontario, shows the gross value of the estate at about \$28,000,000, of which \$4,000,000 is represented by real estate in Canada; \$4,113,000 by 19,475 shares in the C.P.R.; \$646,000 by 2,777 shares in the Bank of Montreal.

S. R. Hesson, who died at Stratford, Ont., Nov. 17, aged 86, was connected with the earlier days of railway building in Canada, having been chairman of the trust board under the control of which were the funds for the construction of the Georgian Bay and Lake Erie Ry.

E. G. Darnley, who is stated to have been formerly in C.P.R. service in Canada, is reported to have been awarded the contract by the Australian Government to raise the German cruiser Emden, which was driven ashore by the Australian warship Sydney, at Keeling Island, in Nov. 1914.

F. P. Brady, General Superintendent, National Transcontinental Ry., Cochrane, Ont., was reported, early in November, to be seriously ill in a Montreal hospital, but on Nov. 3 a statement issued from Cochrane announced that there was no foundation for the rumor and that he was in his usual state of health.

Sir Andrew Noble, who died in Scotland towards the end of October, aged 84, was Chairman, since 1901, of Sir W. G. Armstrong, Whitworth & Co., Ltd., shipbuilders and ordnance manufacturers, of England, builders of several special vessels utilized in Canadian service. He is survived by Lady Noble, who is a native of Quebec.

G. Cummings, who died at Allandale, Ont., aged 65, had been in G.T.R. service for 47 years, chiefly as a locomotive driver. In his early days with the company he was on the run between Toronto and Collingwood, when wood was used as fuel, and a full freight train consisted of 18 cars, each of not more than 10 tons weight. He was pensioned on Apr. 1.

E. B. Pryor, who has been with the Wabash Rd. through its many vicissitudes for 35 years, for the past four of which he has acted as one of the receivers, has retired from active railway service, on the conclusion of the receivership and the reorganization of the company, and is devoting his time to the affairs of the State National Bank, St. Louis, Mo., of which he is President.



**William Downie**, formerly General Superintendent, Atlantic Division, Canadian Pacific Ry., at St. John, N.B., and now of Whitby, Ont., was operated on at Wellesley Hospital, Toronto, Nov. 1, for gall stones. On Nov. 20 he was removed to another private hospital at 33 St. Vincent St., Toronto. He is convalescing satisfactorily and is expected to be able to leave the hospital early in December.

**T. E. Boddy**, who died at Toronto, Nov. 18, from gas asphyxiation, was the first train dispatcher on the Credit Valley Ry., at Streetsville Jct., Ont., and was subsequently ticket agent, C.P.R., at the Union Station, Toronto, and later, City Ticket Agent, C.P.R., Peterborough, Ont., which position he held until he was superannuated. The funeral at Streetsville on Nov. 22 was attended by several local railway and steamship officials.

**Dr. J. Alexander Hutchison**, Chief Medical Officer, Grand Trunk and Grand Trunk Pacific Railways, has three sons enlisted for overseas service, viz., Bruce Caverhill, aged 21, McGill science student, trooper, Headquarters Staff, Second Brigade, Canadian Mounted Rifles; Keith Ogilvie, aged 19, McGill medical student, private, no. 3, Canadian General Hospital; and Ross Rutherford, aged 18, McGill art student, sapper, no. 2 Signal Co., Canadian Engineers.

**John Howard**, who died at Orangeville, Ont., recently, entered railway service with the Credit Valley Ry., about 1880. In 1897, on the absorption of the Credit Valley Ry. by the C.P.R., he was appointed station agent at Mount Forest, and in 1900 was transferred to Orangeville, where he remained until retired under the pension rules. K. R. Howard, a travelling auditor for the C.P.R. at Brandon, Man., and H. W. Howard, agent, Canadian Northern Ry., Kindersley, Sask., are sons.

**Harold S. Granger**, who has been appointed City Freight Agent, Canadian Northern Ry., Edmonton, Alta., was born at London, Ont., Aug. 19, 1892, and entered railway service Mar. 3, 1910, since when he has been, to Aug., 1911, clerk, District Freight Office, C.P.R., London, Ont.; Aug. to Oct., 1911, clerk, General Freight Office, Canadian Northern Ry., Winnipeg; Oct., 1911, to Jan., 1915, chief clerk, District Freight Agent's office, C.N.R., Edmonton, Alta.; Jan. to Oct., 1915, Soliciting Freight Agent, C.N.R., Saskatoon, Sask.

**Henry Goldmark**, Consulting Engineer, New York, N.Y., who has done considerable work in Canada, has been retained to take charge of the fabrication, in the United States, of the lock gates, sluice valves, operating machinery and electrical equipment for the large tidal lock which will give access to the new harbor at Chemulpo, Korea. The work is to be done in accordance with competitive plans prepared by Mr. Goldmark for the McClintic-Marshall Co., of Pittsburgh, successful bidders on the entire equipment, which were adopted by the harbor authorities.

**Lieutenant J. C. Hughes**, of the Royal Canadian Engineers, who was reported, Nov. 16, to have been killed in action, by a shell, at Loos, was the only son of Jas. L. Hughes, formerly Inspector of Schools, Toronto, and a nephew of Major General Sir Samuel Hughes, K.C.B., Minister of Militia. He was educated at Parkdale Collegiate and the School of Practical Science, Toronto, graduating in 1909 with the degree of B.A.Sc. He was for some time on the C.P.R. engineering staff, and was engaged on location of the Campbellford, Lake Ontario and Western Ry. Just prior to the war, he was engaged in railway location work in New Brunswick.

**John Alton Audrain**, who has been appointed Trainmaster, C.P.R., Minnedosa,

Man., was born at St. John's, Jersey, Channel Islands, Jan. 23, 1883, and entered C.P.R. service in Apr., 1897, since when he has been, to 1904, apprentice, car shops, Winnipeg; 1904, to July 1, 1905, mechanic, car shops, Winnipeg; July 3 to Aug. 31, 1905, express messenger, Dominion Express Co., Winnipeg to Gretna and Emerson; Aug. 31, 1905, to May 1, 1906, mechanic, car shops, C.P.R., Winnipeg; May 10, 1906, to July 28, 1910, brakeman and baggage man, main line and branches out of Winnipeg; July 28, 1910, to Sept. 7, 1915, station master, Winnipeg.

**W. Roberts Devenish**, A.M.Can.Soc.C.E., who has been appointed Superintendent, District 2, Intercolonial Ry., Campbellton, N.B., was born in County Tipperary, Ireland, Nov. 21, 1882, and entered transportation service in 1903, serving with the C.P.R. for eight years, in various capacities in the Engineering and Maintenance of Way Departments, from rodman to Assistant Division Engineer, Lake Superior Division. He was appointed Division Engineer, Canadian Government Railways, Moncton, N.B., in



J. A. Audrain,  
Trainmaster, District 3, Manitoba Division,  
Canadian Pacific Railway.

Sept. 1913, and for a time prior to that he acted as Assistant Engineer with the National Transcontinental Ry. Investigation Commission.

**Lieutenant-Colonel W. B. Kingsmill**, who has been appointed to the command of the 123rd Battalion, Canadian Expeditionary Forces, is a member of the firm of Saunders, Torrance and Kingsmill, legal representatives of the Michigan Central Rd., and its subsidiaries in Canada. He is a son of the late Nicol Kingsmill, K.C., who was for 40 years secretary of the Canada Southern Ry. Co., owned by the M.C.R., and is grand son of the late W. A. Thomson, M.P., one of the promoters and builders of the Canada Southern Ry. His paternal grandfather was an officer in the regiment which guarded Napoleon Bonaparte, during his exile at St. Helena. Vice Admiral Kingsmill, of the Canadian Naval Service, is a cousin.

**William Alan Whyte**, who has been appointed District Freight Agent, Canadian Northern Ry., Regina, Sask., was born at Hornsey, England, Nov. 24, 1890, and en-

tered transportation service, July, 1906, since when he has been, to July, 1909, in the Outward Freight Department, Allan Line Steamship Co., London, England; Sept. 8 to Oct. 31, 1909, in Import Foreign Freight Office, C.P.R., Montreal; Nov. 6, 1909, to Jan. 31, 1911, in Local Freight Office, C.P.R., Regina, Sask.; Feb. 1, 1911, to Feb. 25, 1915, City Freight Agent, Canadian Northern Ry., Regina, Sask.; Mar. 1, to Oct. 31, 1915, City Freight Agent, C.N.R., Calgary, Alta.

**W. S. Cookson**, who has been appointed General Passenger Agent, G.T.R., Montreal, was born at Port Jervis, Orange County, N.Y., June 12, 1871, and entered railway service July 15, 1886, since when he has been, to Nov. 1, 1886, clerk in Car Record Office, Erie Rd., Jersey City; Nov. 1, 1886, to Dec. 1, 1899, clerk in General Roadmaster's office, Chicago and Western Indiana Rd., Chicago, Ill. (the G.T.R. is part owner of this railway); Dec. 1, 1899, to May 1, 1909, chief clerk, Assistant General Passenger Agent's office, G.T.R., Chicago, Ill.; May 1, 1909, to June 1, 1910, Assistant General Passenger Agent, G.T.R., Chicago, Ill.; June 1, 1910, to Nov. 13, 1915, Assistant General Passenger Agent, G.T.R., Montreal.

**Hugh McCauley Bird**, whose appointment as acting Trainmaster, District 3, National Transcontinental Ry., Graham, Ont., was announced in our last issue, was born at Alton, Ont., Aug. 31, 1874, and entered transportation service in 1890, since when he has been, to 1896, freight clerk, C.P.R., Owen Sound, Ont., and West St. John, N.B.; 1896 to 1897, clerk, C.P.R., Montreal; 1897 to 1900, freight checker, C.P.R., Owen Sound and Fort William, Ont.; 1900 to 1910, train man, Canadian Northern Ry., Port Arthur and west, and out of Toronto to Parry Sound, Ont.; 1910 to 1912, Trainmaster, New Canadian Co., Port Daniel, Que.; 1912 to 1915, conductor and agent, MacDonnell and O'Brien, railway contractors, Parent, Que.

**G. A. Stokes**, who has been appointed Superintendent of Sarnia Tunnel Terminals, G.T.R., Port Huron, Mich., was born in Nassagaweya Tp., Ont., July 23, 1879, and entered G.T.R. service, Nov. 15, 1897, since when he has been, to Oct. 15, 1899, operator, Listowel, Ont.; Oct. 15, 1899, to Mar., 1899, relieving agent; Mar., 1899, to Apr., 1907, agent, consecutively, at Harriston, Wingham, Warton and Brantford, Ont.; Apr., 1907, to Nov. 1, 1910, dispatcher, Stratford, Ont.; Nov. 1, 1910, to Sept. 13, 1912, Yardmaster, Don station, Toronto; Sept. 13, to Oct. 25, 1912, General Yardmaster, Toronto Terminals; Oct. 25, 1912, to Aug. 10, 1913, Terminal Superintendent, Toronto; Aug. 10, 1913, to Nov. 4, 1915, Division Agent, Ontario Lines, Toronto.

**W. J. Rooney**, who has been appointed Division Superintendent of Telegraphs, Alberta and British Columbia Lines, Grand Trunk Pacific Ry., Edmonton, Alta., was born at Toronto, May 22, 1882, and was from Oct. 19, 1896 to Jan. 17, 1903 in the Toronto Electric Light Co.'s stores and wire departments; Jan. 17, 1903 to Nov. 30, 1905 in Great North Western Telegraph Co.'s construction department; Dec. 1, 1905 to Jan. 15, 1913, General Foreman of Telegraph Construction, Grand Trunk Pacific Ry.; Jan. 15, 1913 to Oct. 25, 1915 Superintendent of Telegraph Plant, G.T.P.R., Winnipeg. Over 600 miles of telegraph line in the prairie provinces were built under his personal direction and he had jurisdiction over all telegraph and telephone construction undertaken by the company between Edmonton, Alta., and Prince Rupert, B.C.

**Right Honorable Sir Charles Tupper**, G.C. M.G., who died at Bexley Heath, England, Oct. 30, was born at Amherst, N.S., July 2, 1821. He played an important part in the



Confederation of the various Provinces now forming the Dominion of Canada, was Minister of Public Works in 1878, and later was appointed the first Minister of Railways and Canals. During his regime the Government policy in connection with the enlargement of the Welland Canal, the deepening of the St. Lawrence channel and a number of improvements on the Intercolonial Ry., was carried out, and in addition, the construction of a private company, of the Canadian Pacific Ry. was undertaken. From April to June 1896, he was Premier of the Dominion. He retired from public life in 1900 and had since lived in England.

**Harry Logan**, Traffic Manager, Los Angeles Dock Co., Los Angeles, Cal., who died there, Nov. 9, from malaria, caused presumably from a mosquito bite while aboard a vessel from South America which was being unloaded, was born in Toronto and started work in District Freight Agent's office, Grand Trunk Ry., there. He was in the Lehigh Valley Rd.'s Freight Department in Toronto for about 15 years as junior clerk, chief clerk and Travelling Freight Agent consecutively. Then he was Travelling Freight Agent for the Canadian Northern Ry. for about 4 years, after which he went to California. He was a well known yachtsman and a member of the Royal Canadian Yacht Club and was at one time in the Queen's Own Rifles and afterwards in the Governor General's Body Guard.

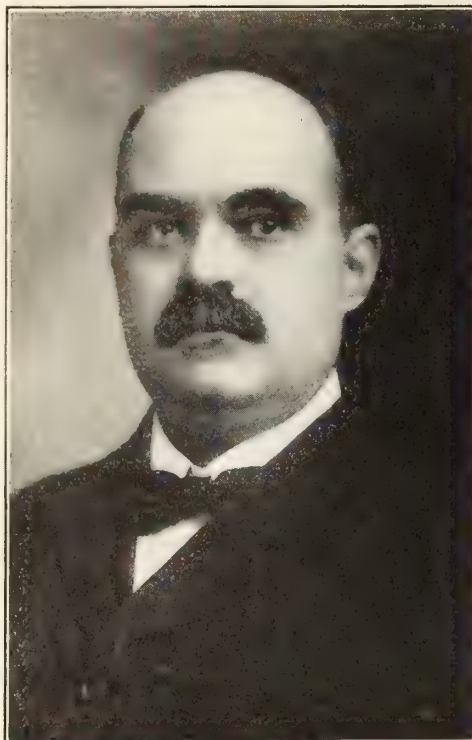
**George Edward Graham**, whose appointment as General Manager, Dominion Atlantic Ry., Kentville, N.S., was announced in our last issue, was born in May 1870, and entered C.P.R. service July 4, 1888, since when he has been, to June 1900, operator, Havelock, Ont.; June 1900 to Nov. 1, 1901, station and weighing inspector, Winnipeg; Nov. 1, 1901 to Feb. 1, 1905, Supervisor of Weighing, Montreal; Feb. 1, 1905 to Aug. 7, 1906, Superintendent, Winnipeg; Aug. 7, 1906 to Mar. 1, 1907, Assistant Superintendent, Brandon, Man.; Mar. 1, 1907 to Feb. 17, 1908, Superintendent, Brandon, Man.; Feb. 17, 1908 to Jan. 1, 1910, Superintendent, Fort William and Port Arthur, Ont.; Jan. 1, 1910 to Sept. 30, 1913, Superintendent, Vancouver, B.C.; Sept. 30, 1913 to Oct. 1915, General Manager, Coquitlam Terminal Co., Ltd., Vancouver, B.C.

**W. B. Smith**, General Manager, Dominion Transport Co., who died at his home in Montreal, Nov. 8, was born at Huntly, Scotland, in 1829, and came to Canada in 1855, entering the service of the late John Shedden, the founder of the Shedden Forwarding Co., in London, Ont. He was transferred to Montreal to take charge of that company's business there in 1860, and was later connected with the late D. Morrice in the cartage business for the Quebec, Montreal and Ottawa Ry., now part of the C.P.R. Subsequently he organized the Dominion Transport Co., of which he was General Manager until his death. T. J. Smith, General Freight Agent, Atlantic Service, C.P.R., London, Eng., is a son, and V. G. R. Vickers, Manager Foreign Department and Superintendent Atlantic Division, Dominion Express Co., Montreal, is a son in law.

**G. H. Hedge**, who has been appointed General Master Mechanic, Western Lines, Canadian Northern Ry., Winnipeg, was born at Neath, Wales, May 26, 1865, and entered railway service in 1879 as machinist apprentice with the Great Western Ry., in England. He came to Canada in 1884, since when he has been, from Mar., 1884, to 1890, fitter in C.P.R. shops at Ottawa, Schreiber, Montreal, Hochelaga and again at Montreal, where he was leading hand; 1891 to 1893, Locomotive Foreman, C.P.R., Megantic, Que.; in 1893 he was transferred to Farnham, Que., and subsequently to Montreal;

1896 to 1901, General Locomotive Foreman, C.P.R., Farnham, Que.; 1901 to 1902, Locomotive Foreman, C.P.R., Medicine Hat, Alta.; 1902 to Jan., 1903, Locomotive Foreman, C.P.R., Brandon, Man.; Jan., 1903, to June, 1908, Locomotive Foreman, Canadian Northern Ry., Port Arthur, Ont.; June, 1908, to Jan., 1912, Assistant Master Mechanic, C.N.R., Winnipeg; Jan., 1912, to Nov., 1915, Master Mechanic, Central Division, C.N.R., Winnipeg.

**William Frederick Allen**, Assoc. M. Soc. C.E., General Secretary of the American Railway Association and Editor and Manager of the Official Railway Guide, died on Nov. 9 from a stroke of apoplexy, at his home in South Orange, N.J. He was born at Bordentown, N.J., in 1846 and received his education at the Protestant Episcopal Academy and the Bordentown Model School. He was first employed as a surveyor on the old Camden & Amboy (N.J.) Rd. In 1868 he became Engineer of the West Jersey Rd. He was an expert on the



W. S. Cookson,  
General Passenger Agent, Grand Trunk Railway.

standardizing of railway time. In 1875 he was made General Secretary and Treasurer of the General Time Convention, which was composed of the principal trunk line railways and was represented by their general managers and superintendents. The following year he was elected Secretary of the Southern Time Convention, consisting of the leading Southern railway lines. These conventions were consolidated in 1886 and from them the American Railway Association developed.

**Cecil Wray Johnston**, who has been appointed Assistant General Passenger Agent, G.T.R., Montreal, was born at Actonvale, Que., July 27, 1879, and entered G.T.R. service Sept. 1, 1897, since when he has been, to Mar. 8, 1900, operator and agent at Richmond, Que.; Berlin, Ont.; Island Pond, Vt., and Sherbrooke, Que., consecutively; Mar. 9, 1900, to June 21, 1901, clerk to Auditor of Freight Accounts, Montreal; June 22, 1901, to June 25, 1902, ticket clerk, Montreal; June 26, 1902, to Dec. 31, 1904, Travelling Passenger Agent, Montreal; Jan. 1, 1905,

to Feb. 15, 1907, excursion clerk, General Passenger Agent's office, Montreal; Feb. 16, 1907, to May 10, 1909, Travelling Passenger Agent, Montreal; May 11, 1909, to Jan. 31, 1912, chief clerk, General Passenger Agent's office, Grand Trunk Pacific Ry., Winnipeg; Feb. 1, 1912, to May 25, 1913, chief clerk, Assistant Passenger Traffic Manager's office, G.T.R., Montreal; May 26, 1913, to Feb. 15, 1914, chief clerk, Passenger Traffic Manager's office, Montreal; Feb. 15, 1914, to Nov. 13, 1915, Assistant to Passenger Traffic Manager, Montreal.

**W. P. Hinton**, who has been appointed Traffic Manager, Grand Trunk Pacific Ry. and Grand Trunk Pacific Coast Steamship Co., and also Western Traffic Manager, Canadian Government Railways, Winnipeg, and whose portrait appears in this issue, was born at Hintonburg, Ont., Aug. 30, 1871, and entered railway service, May 1887, since when he has been, to Aug. 1891, clerk, freight, passenger and car accounts, and travelling auditor, Canada Atlantic Ry.; Aug. 1891 to Mar. 1898, rate clerk, same road, and accountant, Canada Atlantic Fast Freight Line; Mar. 1898 to June 30, 1901, Assistant General Freight Agent, same road, and Canada Atlantic Transit Co.; June 30, 1901 to Jan. 30, 1903, General Freight Agent, same road; Jan. 30, 1903 to Oct. 1905, General Passenger and Freight Agent, same road; Oct. 1905 to Jan. 1907, General Agent, Passenger Department, G.T.R., Ottawa, Ont.; Jan. 1907 to Apr. 1909, Assistant General Passenger and Ticket Agent, same road, Montreal; Apr. 1909 to Feb. 1914, General Passenger Agent, Grand Trunk Pacific Ry., Winnipeg; Feb. to Oct. 1914, Assistant Passenger Traffic Manager, same road, Winnipeg; Oct. 1914 to Nov. 11, 1915, Assistant Passenger Traffic Manager, G.T.R. and G.T.P.R., Montreal.

**Railways and the Operation of the Quebec Bridge.**—E. J. Chamberlin, G.T.R., replying to a communication from the Quebec Board of Trade, Nov. 4, respecting the use of Quebec terminals by railways operating south of the St. Lawrence, stated that such a matter could hardly be considered seriously until it had been determined what the position of the Dominion Government would be relative to the use of the Quebec bridge when completed. When this had been settled it would then be for the railways concerned to consider whether it would be profitable for them to cross the river or not. At a subsequent meeting of the Board of Trade, the Secretary was instructed to write the Department of Railways and Canals with a view to ascertaining what fees would be charged railways for the use of the bridge. Pending this information, it is understood that no steps regarding terminal facilities in Quebec will be undertaken by any of the railways referred to.

**The June Mechanical Conventions.**—At a meeting of the executive committees of the American Railway Master Mechanics' Association and the Master Car Builders' Association, at Chicago, Ill., Nov. 15, it was decided that the next conventions will be held at Atlantic City, N.J., the Master Car Builders' Association meetings commencing June 14, and the American Railway Master Mechanics' Association meetings June 19. There is a possibility that some future conventions will be held at Chicago.

**The C.P.R. has adopted a service badge** for passenger trainmen. Passenger conductors are given one gold bar for 15 years service, and an additional bar for every additional five years of service. Other trainmen and uniformed employees are given silver bars for the same number of years service. Sleeping car conductors are given the first gold bar for 10 years service.



# Railway Development, Projected Lines, Surveys, Construction, Betterments, Etc.

**Alberta and Great Waterways Ry.**—In an interview at Edmonton, Nov. 1, the President, J. D. McArthur, is reported to have stated that the work done on this line during this year includes 160 miles of grading, which takes the line practically to Fort McMurray. Track laying is being gone on with, and it is expected to have the 160 miles ready for operation early next spring. A train service is in operation to Lac La Biche, mileage 124, and Fort McMurray is at about mileage 300 from Edmonton. (Nov., pg. 407.)

**Burrard Inlet Tunnel and Bridge Co.**—Application is being made to the Dominion Parliament for an extension of time for the commencement and completion of this projected bridge over the North Arm of Burrard Inlet with railway and tunnel connections. E. T. Cockerell, North Vancouver, B.C., is Secretary of the company. (Nov., pg. 437.)

**Canadian Pacific Ry.**—A press report stating that a contract had been let to the Foundation Co., Montreal, for the construction of a bridge at Darling, on the Toronto-Sudbury line, 114.8 miles from Toronto, at a cost of about \$50,000, was mentioned in Canadian Railway and Marine World for November. We are advised that there is nothing new in the report. Last spring the Foundation Co. was awarded a contract for building the substructure of Shaw's Creek Bridge, near Darling, which work has been finished for some time, the erection of the superstructure being left over until some future date.

The extension of the line easterly from Foremost, Alta., now under construction, will carry the line to about 10 miles from Lake Pakowski, and will leave a gap of about 44 miles to connect with the present western end of steel at Allawan, Sask. This line is generally known as the Weyburn-Lethbridge line.

Dredging is reported to have been started between sheds 3 and 4 at the quayside, Vancouver, to deepen the basins so as to allow ocean going steamships to go alongside the electric crane when taking on heavy machinery or other heavy cargo. (Nov., pg. 437.)

**Central Canada Ry.**—R. Douglas, an engineer of the Alberta Railways Department, returned to Edmonton, Nov. 4, after making an inspection trip over this line, under construction from McLennan, on the Edmonton, Dunvegan and British Columbia Ry., to Peace River Crossing. The line is about 50 miles long, and grading is reported completed with the exception of a small cut near Peace River Crossing. The cut was being blasted when Mr. Douglas was there, owing to frost having set in, and it was expected to have the grading finished in a fortnight thereafter. Track had been laid to mileage 37 from McLennan, and was expected to be laid to the crossing early in December. The plans for the building of a permanent bridge at the crossing of the Hart River, mileage 40, are under consideration, but no plans, we are officially advised, have been prepared for the crossing of Peace River. Timothy and Riley are the grading contractors. (Oct., pg. 392.)

**Dominion Government Railway to Hudson Bay.**—We are officially advised that grading has been completed to mile 378, from Pas. Man., leaving 46 miles more to be completed to Port Nelson the terminus on Hudson Bay. Track has been laid to mileage 241, at the Manitou rapids of the Nelson River. Ballasting has been completed to mileage 150, and surfacing to mileage 220. A considerable amount of team filling has been done

during the year. The telegraph line is completed to mile 223, and water tanks have been erected to mile 214. The weather conditions during the whole season have been good, and a very satisfactory amount of work has been done.

The steel bridge which is being erected at the Manitou rapids of the Nelson River is of the anchored cantilever type. It consists of three piers and two abutments of concrete, which were completed in October. A start has been made with the erection of the steel, and the work will be carried on throughout the winter. J. W. Porter, is Chief Engineer.

We are officially advised that the Manitoba Railways Department has not heard of any suggestion being made that it should undertake the building of a line from Pas to some recent gold discoveries in northern Manitoba. (Nov., pg. 437.)

**Edmonton, Dunvegan and British Columbia Ry.**—Grading between Smokey and Spirit Rivers is reported to have been completed, about 60 miles having been done this year. Track laying is not expected to be completed until Mar., 1916.

The Board of Railway Commissioners has authorized the building of a bridge over the Smokey River for which a contract has been let to the Dominion Bridge Co. The bridge, which will have a total length of 1,100 ft., will consist of two spans of 86 ft. each, six spans of 128 ft. each, and one through span of 125 ft. Work on erecting the steel is expected to be begun in January, and to be completed in April next.

R. Douglas, an engineer connected with the Alberta Railways Department, returned to Edmonton Nov. 4, after an inspection of the line, and of the Grande Prairies branch. He is reported to have said that grading for the entire 60 miles had been completed, with the exception of some connecting strips in the Saddle Mountains district, between mileage 19 and 30. He expected that grading would be entirely completed by Dec. 1. The track is not expected to be laid until next spring. G. H. Webster, of Calgary, is contractor for grading. (Nov., pg. 437.)

**Grand Trunk Ry.**—The Owen Sound, Ont., Town Council has granted permission for the laying of a siding along the West Esplanade to William Kennedy and Son's works.

Permission has been granted by the Goderich, Ont., Town Council for the extension of the siding at the North American Chemical Co.'s premises, Maitland Road. (Nov., pg. 437.)

**Grand Trunk Pacific Ry.**—The Board of Railway Commissioners has approved revised location of the branch line from Biggar, Sask., to Calgary, Alta., through the s. e.  $\frac{1}{4}$  sec. and n.  $\frac{1}{2}$  sec. tp. 35, range 17, west third meridian, Sask. This branch is in operation from Biggar to Loverna, 105 miles.

The Saskatoon city council has advised the company's officers that while it will be very glad to see the G.T.P.R. have an entrance to the new Union Stockyards, it must make its own arrangements with the C.P.R. and the Canadian Northern.

The Pacific Northern and Omineca Ry., the charter of which is owned by the G.T.P.R., is applying to the Dominion Parliament for an extension of time for the building of its projected railway from Kitimat Inlet on the Pacific Coast, to Hazelton on the Skeena River, then to the northern boundary of British Columbia at Teslin or Otter Lake; and from Hazelton easterly to the Peace River Pass, and on to Edmonton, Alta. (Nov., pg. 437.)

**Great Northern Ry. (U.S.A.)**—During the year ended June 30, there has been constructed at the Winnipeg terminal of the Midland Ry. of Manitoba (one of the G.N.R. controlled lines in Canada), a five unit fruit warehouse, each unit being 67 x 80 ft.; a loading platform 10 x 40 ft., and there have been laid various additional industrial tracks with a total length of 1.13 miles.

Alderman Gale was informed at the Vancouver City Council Railways Committee meeting, Nov. 4, that nothing had been done in the way of preparing plans for the station, as directed by the Board of Railway Commissioners, except so far as preliminary strides were concerned. The committee decided to wait until Dec. 1 before taking any further action. (Oct., pg. 392.)

The designs for the new passenger station for the G.N.R. and the Northern Pacific Ry., were submitted to the Vancouver city council, Nov. 7, and approved. The plans were prepared by F. L. Townley, and show an L shaped building, having a frontage of 228 ft. on Park Lane, with a depth of 60 ft., while the L will be 40 x 130 ft. The building will be of reinforced concrete on pile foundations, faced with a granite base and terra cotta brick. The front portion of the building will consist of a main waiting room 60 x 100 ft., flanked by two wings two storeys high. In the lower portion of these wings will be waiting, immigration, telegraph, telephone and stationmaster's offices, and a large exhibition room. The operating and traffic staffs will be accommodated in the upper storeys, the G.N.R. occupying one wing and the N.P.R. the other. In the L there will be baggage, express and mail rooms, and on the east side running the whole length of the building there will be a concourse 28 ft. wide, with glass roof, giving access to 11 sets of tracks, each of which will have an umbrella connecting with the roof of the concourse. A private road will run by the side of the L for the baggage and express traffic, and another road will give access to the waiting room. There will be two entrances to the front of the building. The building will be erected on a part of the reclaimed False Creek flats.

The detail plans are in course of preparation, and it is reported that contracts for the erection of the building will be placed at an early date.

The plans were given consideration by the Vancouver City Council's bridges and railway committee, Nov. 11, and approved, the committee asking the company to let the contracts at once, and to set back the main front 100 ft. back from the Park Lane street line. The city council had the plans before it, Nov. 15, but declined to take any action beyond deciding to forward copies of the plans to the Board of Railway Commissioners and to the Provincial Government, and concurring in the resolution of the bridges and railway committee to have the building set back 100 ft. from the Park Street line, so as to make it conform with the Canadian Northern Pacific Ry. proposals.

A. H. McNeill, K.C., counsel for the company, submitted the following statement regarding the sums the company proposed to expend as estimated by F. L. Townley, the architect: Foundations, pile and concrete, \$30,000; station building, \$268,699; heating, \$25,000; boiler house, \$10,000; pipe tunnel, \$5,000; marquise and concourse, \$15,000; umbrella shed and platforms, \$42,000; architect's fees, superintendence and incidentals, \$25,000; making a total of \$421,000. To this must be added the cost of paving the driveways, \$12,000; tracks, including switches,



\$44,000; commissary and car supply building, \$15,000; filling, \$175,000; engine house, \$25,000; engineering, superintendence, administration, etc., \$24,000; a grand total of \$716,000. Freight sheds would cost an additional \$100,000; team tracks, another \$100,000; and additional tracks and switches, to make up eleven in all, \$105,000. These sums total \$1,921,200.

We were officially advised, Nov. 18, that the plans have to be approved by the Board of Railway Commissioners before anything further can be done. (Oct., pg. 392.)

**Greater Winnipeg Water District Ry.**—A project is under consideration in Winnipeg for the promotion of settlement along the route of this railway from St. Boniface to Indian Bay, Lake of the Woods. The line is owned by the City of Winnipeg, and the cooperation of the Dominion and Manitoba Governments is being sought in the proposed plan. The railway was built to facilitate the construction of the new water supply works for Winnipeg, and it is hoped by this means to make the line a permanent revenue producing one, and to aid in solving the unemployment difficulty.

**Intercolonial Ry.**—The passenger station at Levis, Que., which was burned some time ago, will not be rebuilt before next year.

A press report states that the survey work which has been in progress all summer between Truro, N.S., and Painsec Jct., N.B., will be completed by the end of the month. The reconnaissance survey was made last year by Engineer Clarke, who has had charge of the three location parties working this year. The result of the survey is said to give a 0.5% gradient one way and a 0.6% gradient the other, compensated for curvature. The press report says: "The line of the survey goes up the North River from Truro and crosses the Cobequids at the Earltown Lake, the lowest summit in the range. This point of crossing is about 250 ft. below Folleigh Lake, where the crossing is made by the present line. From the Earltown Lake point it passes to New Annan and then past the west end of Mattatall Lake, near Wentworth. After that it follows the ridge east of Wallace River down to a crossing at Carr's Mill Bridge, and thence to Pugwash Junction. After crossing the Pugwash River at some point not yet indicated, the survey line would pass Port Phillip and go, close to the shore, to Baie Verte and across country to Painsec Junction.

We are officially advised that the following contracts have been let since the last ones announced in Canadian Railway and Marine World:—Diversion at mileage 11 from Moncton, to join the I.R.C. with the National Transcontinental Ry., J. W. McManus & Co., Moncton; coal handling plant at Levis, Que.; foundations, Lynch, Peckham and Gorham, Cape Tormentine, N.B.; machinery, Williams and Wilson, Montreal; substructures of four bridges in the vicinity of Fredericton, N.B., R. C. Sutherland, Otsubstructures of four bridges in the vicinity of Sydney, N.S., Jones and Girouard, Ottawa; filling of nine bridges in vicinity of Mulgrave, N.S., G. W. Jowitt & Co., Maugerville, N.B.

The subway under the tracks at Main St., Moncton, N.B., is reported to be completed, and was expected to be ready for street car traffic by the end of November. About 15,000 cubic ft. of earth were excavated. Directly in the centre the ground was excavated to a depth of 13 ft., while the tracks were raised some 5 ft. and graded accordingly on both ends. Some 25 cars of cement, 175 cars of gravel, 10 scow loads of sand, 25 cars of sand, 100,000 ft. of lumber and about 50 kegs of nails were used, besides considerable other material. The excavation and concrete work was done by Soper and Mc-

Dougall, Limited, Ottawa, and the steel work by Rhodes, Curry & Co., Amherst, N.S.

We are officially advised that the construction of the spur line at Bathurst, N.B., is well advanced and should be completed at an early date.

Referring to the press report as to surveys between Truro, N.S., and Painsec Jct., N.B., we are officially advised that they have not yet been completed, and that no official information respecting the gradients, etc., is at present available.

In connection with the branch line from Sunny Brae to Mulgrave, N.S., we are officially advised that no construction has been done this year.

The two last items refer to what Sydney, N.S., papers describe as a new route between Moncton, N.B., and Sydney, N.S., upon which it says the year's survey work has just been completed. A cutoff from the Truro-Painsec Jct. line starts, says the report, at Kempton, and joins the present Truro-Sydney line east of the union station; the line from Ferrona Jct. to Sunny Brae may be used as a part of the route. Two or three routes have been surveyed in Guysboro county, and the report says the route thought most likely to be adopted will be one terminating on the waterfront at Milford, eight miles east of Mulgrave, the present point of crossing to Cape Breton Island. The new route on the island is said to run through St. Peter, to Gabarus and Louisbourg. The press report concludes: "Not only has the field work of the survey been all completed, but the plans of bridges which would be necessary on the new line have been finished as well as plans for the ferry docks, etc., at the Strait of Canso."

In an interview at Montreal, Nov. 5, F. P. Gutelius, General Manager, is reported to have said that although little second track work has been done during this year, about 10,000 tons of new steel have been laid on the main line. About 20% of the main line mileage is now laid with 85 lb. steel, and the remainder with 80 lb. steel. The bridges between Montreal and Halifax are now capable of carrying trains drawn by the heaviest locomotives. The most important of the new bridges constructed is that over the Grand Narrows, on the line to Sydney, N.S., which has been raised 6 ft. About half the station buildings have been repainted, and the remaining half will be done next year. (Nov., pg. 437.)

**Kettle Valley Lines.**—The last spoke on the Coquihalla valley section, which connects up the line with the C.P.R. at Hope, B.C., was expected to have been driven by Nov. 30, and it is hoped to have the line opened for traffic early next spring.

The elevation of the Coquihalla Summit is 3,300 ft. above sea level, and the gradient westerly is 2.2%, while that going easterly is 1%. On the easterly side of the summit the last station is named Juliet, while the first station west of the Summit is Romeo, and all the other stations down the valley to Hope are named after Shakespearean characters. Near Romeo is the large steel bridge erected over Slide Creek, while between it and Boston Bar Creek, the snow sheds are being erected. The permanent steel bridge at Ladner Creek is reported to be practically completed. The general contractors of this section of the line were McArthur Bros., New York; the bridge superstructures were erected by the Dominion Bridge Co., and the snow shed contract is being carried out by Guthrie & Co. A. McCullough is Chief Engineer. (Nov., pg. 437.)

**National Transcontinental Ry.**—Negotiations are reported to be in progress for the taking over by the Dominion Government of the Quebec and Saguenay Ry., a partially constructed line owned by the Quebec Ry., Light and Power Co. The Canadian

Northern Ry. has been reported to have also had some negotiations for taking over the line. The Minister of Railways went over the line recently in company with F. P. Gutelius, General Manager, Canadian Government Railways, and a press report states that track laying and ballasting will be gone on with at once, and the line from the junction with the Q. Ry., L. and P. Co.'s line to Murray Bay got ready for operation by the end of the year. These reports have been so frequent for the past three years or so without anything resulting, that the present statements may be classed as merely a rumor.

We are officially advised respecting the projected pulp mill at Neelands, Ont., that D. Chisholm, who is in control of the project, has let contracts for clearing and grading at the site. The railway officials have not yet started the work of laying the necessary spur track. Neelands is about 30 miles west of Cochrane, the junction point with the Timiskaming and Northern Ontario Ry., and the spur line will be about three miles long. (Nov., pg. 437.)

**Pacific Great Eastern Ry.**—Track is expected to be laid early in December to Clinton, B.C., about 166 miles from Squamish, the Howe Sound terminus of the line, and about 40 miles beyond Lillooet, to which point a train service is in regular operation.

The company is applying to the North Vancouver City Council for a renewal of a lease of land upon which it has a Y for turning its cars. The city passed a resolution, Nov. 2, granting a two years extension of the lease on condition that the company assist the city in obtaining title from the Government to certain foreshore properties. (Oct., pg. 392.)

**Roberval and Saguenay Ry.**—The Quebec Legislature is being asked to extend the time for the building of the projected railway from Roberval on the Quebec and Lake St. John Ry., running round Lake St. John to the Peribonka River, and thence south easterly to the Q. & L. St. J. Ry., near Jonquières, with a branch line to St. Bruno; and for the completion of the lines of the Ha Ha Boy Ry., acquired by the R. & S. Ry., and especially the projected branch line to the St. Maurice River.

**St. John and Quebec Ry.**—D. F. Maxwell, Engineer of Railways for New Brunswick, has made a report to the Provincial Government upon the strata found upon boring tests made at the Mistake, on St. John River, and at Perry's Point, on the Kennebecasis River, at which place it is proposed to build bridges on this railway. It is said that the tests show that suitable foundations can be secured for the bridges at such points on the line as originally routed by the surveys made under his direction. The report was considered at a meeting of the Cabinet held Nov. 4.

The question of the completion of the line, which has been taken over by the Provincial Government, is under consideration by the Cabinet. (Oct., pg. 393.)

#### PACIFIC NORTHERN AND OMINECA RAILWAY COMPANY.

NOTICE is hereby given that the Pacific Northern and Omineca Railway Company will apply to the Parliament of Canada, at the next session thereof, for an Act extending the time within which it may proceed to construct, complete and put into operation the lines of railway which it was authorized to construct by chapter 90 of the statutes of 1902, as amended by chapter 141 of the statutes of 1906, and for other purposes.

Dated at Montreal, this 3rd day of November, A.D. 1915. W. H. BIGGAR,

Solicitor for the applicants



# Traffic Orders by the Board of Railway Commissioners.

## Gravel Weights on Michigan Central Rd.

24381. Oct. 29. Re application of Hagersville Contracting Co., Ltd., complaining against maximum and minimum weights on carloads of gravel shipped over St. Clair Division, Michigan Central Rd.: It is ordered that the M.C.R. publish forthwith a supplement to its Tariff, C.R.C. no. 1743, embodying the following rule, viz.: "The minimum weight on traffic destined to the St. Clair Division of the Michigan Central Rd. will be 50,000 lbs., unless the marked capacity of the car is less, in which case the marked capacity of the car, but not less than 40,000 lbs., will be the minimum; and on traffic destined to points on the St. Clair Division the total weight of the car and contents must not exceed 100,000 lbs.

## Perishable Freight in Heated Cars.

24385. Oct. 28. Re order 23392, Mar. 4, 1915, directing the C.P.R. to accept shipments of perishable freight for carriage in heated cars between points west of Port Arthur, Ont., upon the terms and conditions set forth in the order. Upon its appearing that the said order was not limited, in the terms of the judgment, to less than carload shipments as intended: It is ordered that the same be, and it is hereby amended as follows, viz.: By adding after the figures "16" in the 6th line of the recital to the order the words, "applying to lines west of Port Arthur, Ont.," and adding after the word, "accept," and before the word, "shipments," in the second line of the operative part of the order, the words, "less than carload." And it is further ordered that orders 23860, June 16, 1915; 23997, July 22, 1915, and 24132, Aug. 28, 1915, approving forms of Release and Responsibility Special Contract of and Canadian Northern Railway Companies, and Canadian Northern Railway Companies, respectively, be so interpreted.

## Application for Freight Refund Refused.

24400. Nov. 4. Re complaint of A. H. Mayland, of Calgary, Alta., against extra freight charged by C.P.R. on a shipment of hogs to Gordon, Ironsides & Fares, of Moose Jaw, Sask., the shipments in question having been through billed with allowance made for diversion charge. Upon hearing the complaint at Calgary, June 9, the applicant being present at the hearing, and upon the report of the Traffic Officer of the Board, it is ordered that the complaint be dismissed.

## Charge on Cars Awaiting Furtherance Orders at Cartier.

24436. Nov. 11.—Re application of Canadian Pacific Ry. for an order rescinding order 6147, Jan. 21, 1909, as amended by order 10100, Mar. 15, 1910; and for authority to make an extra charge for cars remaining on hand at Cartier, Ont., awaiting furtherance orders, after the expiration of 72 hours from time of arrival: Upon hearing the application in Montreal, Jan. 29, 1915, and in Ottawa, Sept. 21, 1915, the Dominion Millers and the Montreal Corn Exchange Associations, the Canadian Pacific, Grand Trunk, and Canadian Northern Railway Companies, and the Montreal and Toronto Boards of Trade being represented at the hearing, and upon the report and recommendation of the Chief Traffic Officer of the Board—it is ordered that the applicant company be authorized to publish and file a tariff to provide for the charging of special tolls for detention of cars containing western grain and grain products at Cartier for more than 72 hours while awaiting furtherance orders from the consignees thereof, as follows, namely: \$1 a car per day of 24 hours, or part thereof, for the first two days

following the expiration of the said 72 hours, and \$2 a car per day of 24 hours for each succeeding day, or part thereof; the said tolls to be chargeable in addition to the ordinary demurrage toll prescribed by order 906, Jan. 25, 1906, and the stopover charge as fixed by order 6147, Jan. 21, 1909, as amended by order 10100, Mar. 15, 1910.

## Suspension of Import Tariffs.

24440. Nov. 16.—Re application of Toronto Board of Trade for an order suspending Canadian Pacific Ry. Tariff, C.R.C. no. E-3060, published to become effective Dec. 1, containing increased rates on import merchandise from St. John and West St. John, N.B., to stations and connections: Upon reading what has been filed in support of the application, the Canadian Pacific and Grand Trunk companies consenting to the suspension of the tariffs hereinafter set forth, it is ordered that C.P.R. Import Tariff, C.R.C. no. E-3060, from St. John and West St. John, N.B., and G.T.R. Import Tariff, C.R.C. no. E-3280, from Portland, Me., be suspended until further order.

## Shipments of Beer in Heated Cars.

24459. Nov. 20. Re order 23392, Mar. 4, 1915, made upon complaint of Fernie-Fort Steele Brewing Co., Ltd., directing the C.P.R. to accept shipments of such perishable freight as beer, fruit, and vegetables, for carriage in heated cars to its stations on such day or days of each week as are duly announced for the service by the company, subject to the conditions set forth in the order. Upon reading what is filed by the Calgary, Brandon, Winnipeg, Swift Current, Regina, and Moose Jaw Boards of Trade, the Early Fruit Co., Ltd., the Scott Fruit Co., the Northern Fruit Co., and the British Columbia Fruit Growers' Association, it is ordered that order 23392 be amended to provide that the "release" therein mentioned apply only to shipments of beer, in less than carload quantities, on railways west of Lake Superior. That orders 23860, June 16, 1915; 23997, July 22, 1915, and 24132, Aug. 28, 1915, approving forms of release of responsibility special contract of Canadian Pacific, Grand Trunk Pacific, and Canadian Northern Railways, respectively, be rescinded.

## Refrigerator Car Rates for Vegetables.

General order 152, Nov. 2. Re application of Toronto Board of Trade for an order disallowing the following schedules to apply on carload shipments of vegetables when loaded in refrigerator cars, namely, Supplement 5 to G.T.R. Tariff C.R.C. no. E12859 Supplement 15 to C.P.R. Tariff C.R.C. no. E-2715, and Supplement 2 to Canadian Northern Ry. Tariff C.R.C. no. E-386: It is ordered that the railway companies which supply refrigerator cars, at the request of the shippers, for the carriage of vegetables in carload lots, may publish and file tariffs providing for the following maximum tolls for the use of the said cars, to be charged in addition to the tolls published and filed for the same movements in ordinary box cars, viz.: For any distance not exceeding 300 miles, \$3 a trip. For any distance over 300 miles, but not exceeding 500 miles, \$5 a trip. For any distance over 500 miles, but not exceeding 750 miles, \$6 a trip. For any distance over 750 miles, but not exceeding 1,000 miles, \$7.50 a trip. For any distance over 1,000 miles, \$10 a trip. Provided that the maximum toll between any two points, both of which are east of the Detroit and St. Clair Rivers, the Georgian Bay and Sudbury, Ont., including Sudbury, also between any two points both of which are west of Port

Arthur, inclusive, do not exceed \$7.50 a trip. And it is further ordered that any existing schedules in conflict with this order be disallowed.

## Changes in Canadian Freight Classification to be Approved Before Becoming Effective.

General Order. 153. Re sec. 321 of the Railway Act and orders dated Mar. 3, 1904, and Jan. 18, 1909, it is ordered as follows:

1. That any proposed new issue of the Canadian Freight Classification, or any proposed supplement to the issue then current, be submitted in printed proof form for the approval of the Board before it be made effective.

2. That should such proposed new issue or supplement remove any goods from a lower to a higher class, or in any way increase the amount to be paid for carriage, notice of the submission thereof be published in the two next succeeding issues of the Canada Gazette, in the following form:

"Notice is hereby given that the Canadian Freight Association did, on the.....day of....., 19...., submit to the Board of Railway Commissioners for Canada, for its approval, Canadian Freight Classification no. .... (or Supplement no. .... to Canadian Freight Classification no. ....)."

3. That the said proof show and include—

(a) Under the heading of "Additions," articles not previously classified and the proposed ratings therefor, also new rules or regulations which it is proposed to add to the Classification.

(b) Under the heading "Changes," proposed increased or reduced ratings, or changes in the existing rules or regulations, and in a parallel column those previously approved by the Board.

4. That the application to the Board be accompanied by—three copies of the said proof; the reasons, fully stated in manuscript, for proposed changes involving increased transportation charges; a copy of the notice furnished to the King's Printer for publication in the Canada Gazette.

5. That at the same time one copy of the said proof, also of the said notice for publication, be furnished to the following bodies, with the request that fully explained objections, if any, to proposed changes involving increased transportation charges be filed with the Board of Railway Commissioners within 30 days from the receipt of the said proof and notice:—Canadian Manufacturers' Association, Ontario Grocer's Guild, Fruit Growers' Association of Ontario, Montreal Chamber of Commerce, Boards of Trade of Belleville, Berlin, Ont., Brandon, Man., Brantford, Brockville, Ont., Calgary, Alta., Chatham, Collingwood, Cornwall, Ont., Edmonton, Alta., Fort William, Ont., Fredericton, N.B., Galt, Guelph, Ont., Halifax, N.S., Hamilton, Kenora, Kingston, Ont., Lethbridge, Alta., London, Ont., Medicine Hat, Alta., Montreal, Que., Nelson, B.C., Ottawa, Owen Sound, Peterboro, Port Arthur, Preston, Ont., Prince Albert, Sask., Prince Rupert, B.C., Quebec, Que., Regina, Sask., St. Catharines, Ont., St. Hyacinthe, Que., St. John, N.B., St. Thomas, Sarnia, Ont., Saskatoon, Sask., Sherbrooke, Que., Stratford, Ont., Three Rivers, Que., Toronto, Ont., Valleyfield, Que., Vancouver, Victoria, B.C., Waterloo, Windsor, Ont., Winnipeg, Man., Woodstock Ont., also to the railway companies which are not members of the Canadian Freight Association.

## Classification of Cream Pasteurizers.

General Order 154, Nov. 10. Re application of C. Richardson & Co., St. Mary's, Ont., for a reduction in classification of cream pasteurizers, in less than carload lots. It is



ordered that, pending a revision of the present Canadian Freight Classification, railway companies are directed forthwith to publish and file commodity tariffs, to apply between all points in Canada, covering the following, namely:

From one milk can, agitators, 1 C.C.
from two milk can, agitators, 1 C.C.
from three milk can, agitators, 1 C.C.
from four milk can, agitators, 1 C.C.
from five milk can, agitators, 1 C.C.
from six milk can, agitators, 1 C.C.
from seven milk can, agitators, 1 C.C.
from eight milk can, agitators, 1 C.C.
from nine milk can, agitators, 1 C.C.
from ten milk can, agitators, 1 C.C.
from eleven milk can, agitators, 1 C.C.
from twelve milk can, agitators, 1 C.C.
from thirteen milk can, agitators, 1 C.C.
from fourteen milk can, agitators, 1 C.C.
from fifteen milk can, agitators, 1 C.C.
from sixteen milk can, agitators, 1 C.C.
from seventeen milk can, agitators, 1 C.C.
from eighteen milk can, agitators, 1 C.C.
from nineteen milk can, agitators, 1 C.C.
from twenty milk can, agitators, 1 C.C.

#### Charge for Cleaning Live Stock Cars.

General Order 155, Nov. 15. Re general order 147 July 29, 1915, granting permission to railway companies to charge not exceeding 75c. for cleansing and (or) disinfecting any car in which live stock has been carried when the work is done by the railway companies; and that the said toll may lawfully

be an addition to the charges, as published in the companies' tariffs, for transportation of the live stock unloaded from the said cars. Upon its appearing that there is some misunderstanding as to the scope of the order as embodied in the tariffs filed; and that some of the railway companies at least are of opinion that the order authorized a charge for cleaning as distinct from disinfecting, it is ordered that the railway companies publish and file amended tariffs showing a toll not exceeding 75c. for cleaning and disinfecting, or disinfecting any car in which live stock has been carried when the work is done by the railway companies; the tariffs to carry a notation that the charge is to apply when, on account of Federal, provincial or municipal regulations, it is necessary to do the work in question.

## Birthdays of Transportation Men in December.

Many happy returns of the day to:—

E. T. Agate, M.Can.Soc.C.E., ex District Engineer, Canadian Northern Ontario Ry., Sudbury-Port Arthur Line, now of Pittsford, N.Y., born there, Dec. 7, 1874.

J. H. Barber, M.Can.Soc.C.E., Engineering Department, C.P.R., Montreal, born at Cobourg, Ont., Dec. 20, 1856.

O. C. Bishop, Superintendent, Sleeping and Dining Cars and News Service, Canadian Northern Ry., Winnipeg, born at Escanaba, Mich., Dec. 10, 1876.

N. E. Brooks, M.Can.Soc.C.E., Engineer of Maintenance of Way, Western Lines, C.P.R., Winnipeg, born at Sherbrooke, Que., Dec. 25, 1866.

Harold Browning, steamship agent, etc., Windsor, Ont., born at Stamford, Lincolnshire, Eng., Dec. 2, 1864.

W. W. Butler Vice President, Canadian Car and Foundry Co., Montreal, born at Danville, Ohio, Dec. 9, 1862.

J. M. Cameron, General Superintendent, Alberta Division, C.P.R., Calgary, born at Lochabar, N.S., Dec. 18, 1867.

M. M. Campbell, Building Inspector, G.T.R., Montreal, born at Bridgeton, N.B., Dec. 17, 1879.

W. C. Casey, General Agent, Passenger Department, Atlantic Steamship Lines, C.P.R., Winnipeg, born at Moncton, N.B., Dec. 12, 1882.

A. H. Chave, Purchasing Agent and Assistant to First Vice President, Canadian Car and Foundry Co., Montreal, born at Williamsbridge, N.Y., Dec. 26, 1872.

W. H. Gardiner, City Freight Agent, C.P.R., and District Freight Agent, Esquimalt and Nanaimo Ry., Victoria, B.C., born there Dec. 6, 1859.

H. H. Gildersleeve, Manager, Northern Navigation Co., Sarnia, Ont., born at Kingston, Ont., Dec. 15, 1865.

A. S. Goodeve, member Board of Railway Commissioners for Canada, born at Guelph, Ont., Dec. 15, 1860.

A. J. Gorrie, Superintendent, District 1, National Transcontinental Ry., Quebec, born at Raith, Kirkcaldy, Scotland, Dec. 10, 1868.

W. H. Grant, Manager of Construction, Mackenzie, Mann and Co., Ltd., Toronto, born at Acton, Ont., Dec. 8, 1858.

F. P. Gutelius, M.Can.Soc.C.E., General Manager, Canadian Government Railways, Moncton, N.B., born at Mifflinburg, Pa., Dec. 21, 1864.

Jas. H. Hall, President, Western Transportation Co., Ltd., Ottawa, Ont., born at Hawkesbury, Ont., Dec. 20, 1863.

D. B. Hanna, Third Vice President, Canadian Northern Ry., Toronto, born at Thornliebank, Scotland, Dec. 20, 1858.

J. J. Hennigar, Agent Great Lakes Trans-

portation Co., Windsor, Ont., born at Topeka, Kan., Dec. 21, 1884.

E. W. Holton, General Passenger Agent, Northern Navigation Co., Sarnia, Ont., born at Belleville, Ont., Dec. 15, 1872.

A. J. Isbester, Assistant District Engineer, Port Arthur District, Canadian Northern Ry., Port Arthur, Ont., born at Ottawa, Dec. 18, 1879.

R. Johnson, Assistant Locomotive Foreman, C.P.R., Hochelaga, Montreal, born at Quebec, Que., Dec. 24, 1863.

S. R. Joyce, Travelling Passenger Agent, G.T.R., Toronto, born at Napanee, Ont., Dec. 15, 1887.

J. T. McGrath, ex-Superintendent of Motive Power and Equipment, Chicago and Alton Rd., Bloomington, Ill., born at Toronto, Dec. 6, 1869.

A. T. McKean, City Freight Agent, C.P.R., Winnipeg, born at St. John, N.B., Dec. 18, 1886.

A. E. Macdonald, General Claims Agent, Canadian Northern Ry., Winnipeg, born at Woolwich, Eng., Dec. 11, 1870.

L. Macdonald, Division Freight Agent, G.T.R., Toronto, born at Montreal, Dec. 10, 1871.

A. D. MacTier, General Manager, Eastern Lines, C.P.R., Montreal, born at Blairgowrie, Scotland, Dec. 27, 1867.

J. C. O'Donnell, Superintendent, District 3, Western Division, Canadian Northern Ry., Edmonton, Alta., born at Cobden, Ont., Dec. 17, 1879.

S. R. Payne, General Manager, Ottawa and New York Ry., Ottawa, Ont., born at Jefferson, Ohio, Dec. 21, 1865.

A. Price, Assistant General Manager, Eastern Lines, C.P.R., Montreal, born at Toronto, Dec. 6, 1861.

W. J. Radford, Assistant to General Manager, Toronto Suburban Ry., Toronto, born at Boldre, Hampshire, England, Dec. 23, 1870.

G. D. Robinson, Assistant Export and Import Freight Agent, C.P.R., Toronto, born at St. John, N.B., Dec. 7, 1877.

Collingwood Schreiber, C.M.G., Hon. Mem. Can.Soc.C.E., General Consulting Engineer to Dominion Government, Ottawa, Ont., born at Bradwell, Essex, Eng., Dec. 14, 1831.

M. F. Tompkins, Division Freight Agent, Intercolonial Ry., Halifax, N.S., born at Margaree, N.S., Dec. 6, 1878.

C. E. E. Ussher, Passenger Traffic Manager, C.P.R., Montreal, born at Niagara Falls, Ont., Dec. 29, 1857.

H. H. Vaughan, M.Can.Soc.C.E., Consulting Engineer, C.P.R., Montreal, born at Forest Hill, Essex, Eng., Dec. 26, 1868.

R. C. Vaughan, Assistant to Third Vice President, Canadian Northern Ry., Toronto, born there, Dec. 1, 1883.

A. P. Walker, M.Can.Soc.C.E., Assistant Division Engineer, Ontario Division, C.P.R., Toronto, born at West Hartlepool, Eng., Dec. 9, 1860.

E. H. Wood, Division Car Foreman, Ontario Division C.P.R., Toronto, born at St. John, N.B., Dec. 30, 1880.

## Railway Rolling Stock Notes.

The C.P.R. has received one second class steel passenger car from its Angus shops, Montreal.

Canadian Government Railways has ordered a 100 ton wrecking crane from F. H. Hopkins and Co.

The Canadian Northern Ry. has received 11 steel underframe standard sleeping cars from Canadian Car and Foundry Co.

Canadian Government Railways, between Oct. 18 and Nov. 16, received 362 box cars from Canadian Car and Foundry Co.; 162 box cars, from National Steel Car Co.; 95 steel flat cars from Nova Scotia Car Works, and 4 consolidation locomotives from Canadian Locomotive Co.

### Proposed Charge for Checking Baggage.—

A recommendation of one of the committees of the American Association of Passenger Traffic Officers, at its recent annual meeting, was to the effect that a nominal terminal charge of 10c be made for checking baggage. Several reasons are advanced why such a charge should be made, among them being that a passenger travelling with a large trunk receives a greater service free than one who has only hand baggage, which he looks after himself and checks at the terminal for convenience; and that the companies' liability for loss of or damage to baggage has been increased.

### Observation Platforms in Mountains.—

The Grand Trunk Pacific Ry. has for some time had an observation platform at mileage 1,082.5 from Winnipeg, from which passengers get a view of Mount Robson. Another observation platform has been installed 184 miles east of Prince Rupert, between Bulkeley Canyon and New Hazelton, at which train 1 stops for five minutes to let passengers see the Bulkeley Gate, the principal scenic feature of the Bulkeley Canyon. Sign posts are being erected to point out the most prominent scenic features in the mountains.

### Great Northern Ry. of Canada Construction Suits.—

Judgment in the appeal and cross appeal, referred to in Canadian Railway and Marine World for November on pg. 417, was given Nov. 1. The court sustained the Superior Court's judgment granting Smith, Barry and McRae \$63,886 on their claim for a balance of about \$200,000 due on the construction of the Hawkesbury-Joliette section of the line. The court further reduced the award of \$33,000 face value of original first mortgage bonds to \$24,750, and sustained the award of \$330,000 of G.N.R. stock.

### Stanstead, Shefford and Chambly Ry.—

The annual meeting was held at Waterloo, Que., Nov. 18. The directors for the current year are,—G. G. Foster, President; E. J. Chamberlin, Chairman; E. C. Smith, Vice President; W. W. Chaffee, Assistant Secretary and Treasurer; E. C. Smith, G. C. Jones, G. Stevens, J. P. Noyes, Jas. Davidson and W. H. Robinson. J. H. Lefebvre is Secretary-Treasurer, and E. J. Chamberlin, E. C. Smith and G. C. Jones form the executive committee for the management of the line, which is leased to the G.T.R.

### The American Railway Bridge and Building Association will hold its next annual convention at New Orleans, La., Oct. 17 to 19, 1916.



# Canadian Railway AND Marine World

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## NOTICE TO ADVERTISERS.

ADVERTISING RATES furnished on applica-  
tion.

ADVERTISING COPY must reach the pub-  
lishers by the 10th of the month preceding the  
date of publication.

TORONTO, CANADA, DECEMBER, 1915.

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## Canadian Northern Passenger Service Extended to Pacific Coast.

Commencing Nov. 23 from Edmonton westbound and Nov. 24 from Vancouver eastbound, passenger service was established on the C.N.R. between Edmonton and Vancouver, connecting at Edmonton with the service between there, Winnipeg and Toronto. The first connecting train from the west left Toronto Nov. 19, and the first through train from Vancouver arrived in Toronto Nov. 29. The inauguration of this service marks the completion of the C.N.R. as a transcontinental line. The through service between Toronto and Vancouver consists of three trains a week each way. Train 1 leaves Toronto Monday, Wednesday and Friday at 10.45 p.m., reaching Vancouver Saturday, Monday and Wednesday at 5.30 p.m. Train 2 leaves Vancouver Friday, Sunday and Wednesday at 9 a.m., reaching Toronto Wednesday, Friday and Monday at 2.30 p.m.

The C.N.R. main line had not been operated west of Edmonton previously, except by a mixed train bi-weekly to Peace River Jct., mileage 35.7. The new timetable shows that Tollerton, 136.9 miles westerly from Edmonton, is the terminus of the Western Division. In addition to the new main line mileage brought under the operating department, the Peace River subdivision, extending from Peace River to Sangredo, 31.4, is given a bi-weekly mixed train service. The new Pacific Division extends from Tollerton, Alta., to New Westminster, 625.9 miles. This is operated in five subdivisions, viz.: Tollerton, Alta., to Lucerne, B.C., 128.9 miles; Lucerne to Blue River, 110.4 miles; Blue River to Kamloops, 142.5 miles; Kamloops Jct. to Boston Bar, 125.7 miles; Boston Bar to New Westminster, 118.4 miles.

The company's Passenger Department has issued the following information about the route: "The new line from Port Arthur to Sudbury runs through what is known as the 'Clay belt' of Northern Ontario, lying generally somewhat north of the C.P.R. line. The country adjacent to our line is well wooded, and when cleared is adaptable to general farming. The lumbering industry, which will quickly develop, will no doubt very shortly be a profitable source of revenue to the company. The traveller will find the ever changing vista of forest, river and lake a welcome change from the bare monotony of the western prairies. The Nipigon country, just east of Port Arthur, adjacent to the Canadian Northern Ry., has been celebrated for many years as the paradise of the fisherman and big game hunter. The possibilities in this respect of the line further east have not yet developed, but undoubtedly the fishing and hunting throughout the whole district from Port Arthur to Sudbury are exceptionally good. Lakes of fair size are numerous, and all abound in game fish. Big game hunting for moose, bear, deer will undoubtedly be excellent, and in fact the possibilities for sport in the line of fishing and hunting are unsurpassed anywhere on the North American continent. From Edmonton west to Vancouver the shortest route is followed to the Yellowhead Pass, where the road crosses the main ridge of the Rocky Mountains at a maximum elevation of 3,711 ft. above sea level, through the pass within a few miles of Mount Robson, the highest peak in the Canadian Rockies, 13,700 ft., thence through the low Cranberry Lake Pass, across the Canoe River and up Camp Creek to the Albreda River, which it follows from its source to its junction with the North Thompson River. The line then follows the valley of the North Thompson to its junction with the South Thompson. From

Kamloops the north shore of Kamloops Lake is followed to Savona, a distance of 40 miles. After leaving Kamloops Lake the line keeps to the valley of the Thompson River until a short distance beyond Ashcroft, crossing there to the south side, and after a short distance again to the north side, which is followed to the junction of the Thompson and Fraser Rivers at Lytton, where the river is again spanned by a heavy steel bridge, and re-crossed at Cisco to the south side. From Cisco the valley of the river is followed to New Westminster and thence into Vancouver. Until very recently the section from Kamloops to the Yellowhead Pass was practically unknown, settlement being confined to the lower part of the North Thompson. Until the Canadian Northern Ry. sent its engineers through in 1909 the trail had been previously traversed by only a few timber cruisers and prospectors, although as far back as 1862 a trip was made by Viscount Milton and Dr. Cheadle from Edmonton to Kamloops, following practically the same route as the present Canadian Northern line, two months being consumed in making the trip."

## Civil Engineers Look Over Welland Ship Canal Construction.

The Canadian Society of Civil Engineers, Toronto branch, held its annual excursion Nov. 5, when a number of the members, accompanied by a considerable number of under-graduates of the Faculty of Applied Science, Toronto University, went for a trip over a portion of the route of the Welland Ship Canal. The party of about 130 left Toronto at 8.10 a.m., in special cars on the G.T.R. regular train, which were detached at Merritton and run over the G.T.R. branch line to Thorold. They then walked over the work on section 3, had luncheon at a contractor's camp and walked on to Merritton, whence they were taken in Niagara, St. Catharines and Toronto Ry. cars, hauled by a Welland Ship Canal Construction Ry. locomotive, over that line to the Lake Ontario entrance of the canal at Port Weller, stopping at a number of points en route to inspect the work in progress on sections 2 and 1. Port Weller was left on special N., St.C. & T.R. cars at 5.30 p.m. over that line for St. Catharines, where dinner was taken, and Toronto was again reached at 10 p.m. The party was in charge of J.R.W. Ambrose, Chief Engineer, Toronto Terminals Ry. Co., and Chairman, Toronto branch, Can.Soc.C.E. They were met at Merritton by J.L. Weller, M.Can.Soc.C.E., Engineer in Charge, Welland Ship Canal, who spent the whole day with them going over the work, explaining many of its most interesting features and showing them every courtesy.

The canal construction has been very fully described in a number of articles in Canadian Railway and Marine World. Of the work inspected on the trip referred to, it may be mentioned that section 3 includes twin locks 4, 5 and 6, which are arranged in flight, and single lock 7, also a pair of guard gates just south of lock 7. An immense earth dam, with concrete core wall, extends from the head of the flight locks east to the escarpment and will form a pond of 84 acres. Section 2 includes locks 2 and 3, bridges 3, 4 and 5, two pond bridges, extensive water tight embankments and nearly three miles of canal prism. The new ship canal crosses the present canal on the level above lock 3. Section 1 includes the new harbor on Lake Ontario, lock 1, bridges 1 and 2 and about a mile of canal prism. The total length of the new canal will be about 25 miles and the estimated cost is \$50,000,000. The locks will be 800 x 80 ft., with a depth of 30 ft. over the sills. Each lock will have a lift of 46½ ft.



## Canadian Northern Railway Construction, Betterments. Etc.

**Quebec and Lake St. John Ry.**—We are officially advised that the company is building under the St. Charles and Huron River Ry.'s charter a line from Lorette station up the St. Charles River Valley to Stoneham, Que., at the mouth of Huron River, 7.5 miles. The line was located about two years ago by S. S. Oliver, and the location was revised early this year by — Morrison. A contract for grading has been let to a Quebec firm and grading is being done. The principal traffic on the line will be pulpwood. (May, 1912, pg. 231.)

**Canadian Northern Ontario Ry.**—The Board of Railway Commissioners has authorized the building of an interchange track with the C.P.R., near Ottawa.

The coal handling plants at Rideau Jct., Hornepayne and Capreol, on the Montreal-Ottawa-Port Arthur line, were reported, Nov. 12, to be practically completed.

The Port Arthur, Ont., City Council on Nov. 9 granted the company a year's extension of time to Mar., 1917, within which to connect up its tracks from Arthur St., with the main line at Current River.

**Canadian Northern Ry.**—The Board of Railway Commissioners has authorized the opening for traffic of the line between Grand Marais and Birds Hill, Man., 50 miles. It was authorized to be opened temporarily in February last. An extension to Victoria Beach, 14 miles, is reported to have been graded.

We are officially advised that track has been laid on the line between Bienfait and Estevan, Sask., 8 miles. An order has been made by the Board of Railway Commissioners authorizing its opening for traffic.

The Board of Railway Commissioners has approved of revised location of a branch line through sections 3, 4 and 5, tp. 35, range 7, east 2nd meridian, Saskatchewan, mileage 83.99 to 87.71.

We are officially advised that grading is being done on the line projected from Calgary to MacLeod, Alberta.

We are officially advised that grading has been carried on this year on the line from Oliver towards St. Paul de Metis, Alta. A press report states that over 100 miles of grading will be completed by the end of the year on this line, which as at present projected will be 117 miles long.

**Canadian Northern Pacific Ry.**—The Minister of Railways for British Columbia has issued a certificate authorizing the opening for traffic of the line from the summit of the Yellowhead Pass, on the eastern boundary of the province, to Port Kells, 491 miles. To secure a connection with New Westminster the company acquired the Great Northern Ry.'s Port Kells branch from the southern end of the New Westminster bridge to Port Kells, 8.3 miles. These two mileages total 499.3 miles, practically agreeing with the total of 499 miles given in the table of distances from New Westminster bridge to Yellowhead, given in our Oct. issue on pg. 370. From the bridge to New Westminster and Vancouver the company's trains run on the Great Northern tracks under an agreement.

The Minister of Railways for British Columbia has approved of plans for the erection of protective shed where needed along the line to protect the track from rolling gravel and disintegrated rock.

The report that an order has been given for two car ferries is incorrect. One has been ordered and full particulars of it are given in the Marine Department of this issue.

**Vancouver Terminals.**—We are officially advised in connection with the terminal

work in progress at Vancouver, that the present contract covers the erection of a sea wall, located 300 ft. west of Main St. bridge, for the purpose of enclosing the head of False Creek, which is being reclaimed by the company for the purpose of its terminals. This contract has been let to A. G. Creelman and Sons, Vancouver, and covers the building of a reinforced concrete sea wall, with two slips for the accommodation of steamships. It is expected that the work can be completed in five or six months. The reclamation work on False Creek itself is being carried on by the Pacific Dredging Co., which is dredging a channel for the Dominion Government from Main St. to English Bay. The material dredged from this channel is being deposited on the False Creek flats, through a pipe line. The C.N.R. has at present an area of 64 acres, contained within a temporary bulkhead completely filled in and ready for the laying of tracks. It was intended to erect a temporary station and freight sheds on this area pending the completion of the remaining filling, and the erection of the permanent station buildings, but owing to a change in policy this work has been suspended pending negotiations being completed with the Great Northern Ry.

**Lines on Vancouver Island.**—Rails sufficient for the 16 miles between Victoria and Patricia Bay are reported to have been delivered, for immediate laying. Provincial Government officials are reported to have stated, Nov. 4, that the line would be ready for operation within three months; that tracklaying on the line from Victoria to Alberni would be started early next spring, and that a contract had been let for two car ferries to be operated between Patricia Bay and the mainland. The landing piers at Patricia Bay and on Lulu Island will, it is reported, be put under contract as soon as the ferry plans reach Vancouver. The connecting line with the ferry slip at Lulu Island starts off from the north end of the New Westminster bridge, follows along the North Arm, and crosses over to Lulu Island at the easterly apex of the triangle, and is then continued to road 5 near Ladner's Ferry. Steel is reported to have been laid on a portion of the line, which it is proposed to extend to the canneries at Steveston. (Nov., pg. 424.)

**Vancouver Branch United Yardmasters' Association.**—A branch of the United Yardmasters' Association was organized in Vancouver, B.C., No. 1, with the following officers:—President, D. Nicks, General Yardmaster, C.P.R.; Vice President, D. Robinson, General Yardmaster, Great Northern Ry.; Treasurer, R. V. Mills, Yardmaster, British Columbia Electric Ry.; Secretary, S. M. Willis, Chief Clerk, C.P.R. Yardmaster's office, Coquitlam.

The C.P.R. trains heretofore running between Lethbridge and Cardston, Alberta, are now being run through to Calgary, via MacLeod, with stopover privileges at Lethbridge. The train heretofore running between Medicine Hat and Calgary, only runs as far as Aldersyde, connecting there with the Cardston-Calgary train.

### THE VICTORIA ROLLING STOCK & REALTY CO., OF ONTARIO, LIMITED.

Notice is hereby given that a dividend of three and a half per cent. on the paid-up capital stock of the Company for the half-year ended Nov. 30th, 1915, has been declared payable Dec. 1st, 1915, to the shareholders on record as of the 30th of Nov., 1915.

By order of the Board.

G. T. CHISHOLM, Secretary.  
Toronto, Nov. 20th, 1915.

## Alberta Public Utility Commissioners.

G. H. Bulyea, who has been appointed chairman, Alberta Public Utilities Commission, was born at Gagetown, N.B., Feb. 17, 1859, and was educated at Queens County Grammar School, Gagetown, and at the New Brunswick University, graduating B.A. therefrom in 1878. After teaching in the Sunbury County Grammar School, he moved to Manitoba in May, 1882, and in March, 1883, to Qu'Appelle, Sask., where he engaged in mercantile business. He was elected a member of the Northwest Council in 1884, and in 1898 was appointed Administrator of the Yukon District, remaining in that position only a few months. He was re-elected to the Northwest Council at the next general election, being subsequently appointed Minister of Agriculture; and in Feb., 1903, was appointed Minister of Public Works. On the creation of the province of Alberta, he was appointed Lieutenant-Governor, Sept. 1, 1895, and was re-appointed for a second term which expired recently.

J. Stocks, the second member of the commission, was born at Sherrington, Que., in 1858, and spent his younger days in the vicinity of Sherbrooke, Que. In 1881 he entered the employ of a construction company, which subsequently became merged with C.P.R. interests; and he went to the West in that service. After a couple of years as foreman of construction, he obtained promotion and subsequently was Superintendent of Construction and Maintenance on the C.P.R. from Swift Current to Laggan. In 1901 he was appointed Assistant Chief Engineer for the old Northwest Territorial Government, subsequently succeeding to the office of Deputy Minister of Public Works, which he held until the formation of the province of Alberta, in 1905, when he was appointed Deputy Minister of Public Works for that province, a position he has now resigned to take up his new duties.

A. A. Carpenter, the legal member of the commission, was born at Hamilton, Ont., Sept. 3, 1873, and was educated at Hamilton Collegiate Institute and Toronto University. He practised law in Hamilton from 1897 until his removal to Alberta in 1903. He was appointed judge of the district court at MacLeod in 1907, and was subsequently moved to Calgary, where he still resides.

**Detroit River Tunnel Construction Suit.**—D. C. McBean, civil engineer, New York, is suing the Detroit River Tunnel Co. (Michigan Central Rd.), for \$2,000,000 royalties for alleged infringement of patents utilized in the construction of the Detroit River tunnel. His claim states that he attempted to build a tunnel under the Detroit River in 1872, but owing to changing currents and chemical gases the project was abandoned, and asserts that his experience and investigation at that time made the present construction possible, and that the company had profited by his patents.

**Canadian Northern Ry. Bridges.**—In the illustrated article on the C.N.R. bridges over the Carp, Mississippi and Ottawa Rivers and Stoney Creek, on pages 453 and 454 of this issue, it should have been stated that Canadian Railway and Marine World is indebted for the photographs from which the four illustrations were made to W. P. Chapman, M.Can.Soc.C.E., Engineer of Bridges, Mackenzie, Mann & Co., Ltd., under whose direction the bridges were designed and their erection inspected.

**Eastern Rates Case.**—An Ottawa press despatch says that a decision on the railway companies application to advance freight rates will be given by the Board of Railway Commissioners in the near future.



# Transportation Appointments Throughout Canada.

The information under this head, which is gathered almost entirely from official sources, is compiled with the greatest care, so as to ensure absolute accuracy. Anyone who may notice any error in our announcements will confer a favor by advising us.

**Canadian Government Railways.**—W. P. HINTON, Traffic Manager, Grand Trunk Pacific Ry., has also been appointed Western Traffic Manager, Canadian Government Railways. Office, Winnipeg.

Capt. C. T. KNOWLTON has been appointed Superintendent of Ferries, in charge of floating equipment. Employees on all floating equipment report to, and receive instructions from him, and he reports to the General Superintendent, Intercolonial Ry. Office, Moncton, N.B.

A. R. MACGOWAN, Division Engineer, has had his jurisdiction changed to cover Districts 3 and 4, Intercolonial Ry., and the Prince Edward Island Ry. Office, Moncton, N.B.

H. T. RUHL, heretofore Resident Engineer, Intercolonial Ry., New Glasgow, N.S., has been appointed Division Engineer, Canadian Government Railways, with jurisdiction over Districts 1 and 2, I.R.C., and District 5, National Transcontinental Ry. Office, Moncton, N.B.

See also Intercolonial Ry. and National Transcontinental Ry.

**Canadian Northern Ry.**—A. ANGSTROM has been appointed Naval Architect. Office, Toronto.

W. H. GRANT, in addition to his duties as Manager of Construction, Mackenzie, Mann & Co., Ltd., has been appointed Tie and Timber Agent, Lines East of Port Arthur, Ont. Office, Toronto.

A. M. YUILL, heretofore Tie and Timber Agent, has been appointed General Tie and Timber Inspector, reporting to the Tie and Timber Agent, Eastern Lines. Office, Toronto.

J. H. McALPINE, heretofore District Master Mechanic, Parry Sound, Ont., has been appointed Master Mechanic, Ontario Division, and his former position has been abolished. Office, Toronto.

W. C. MOORE, heretofore District Master Mechanic, Trenton, Ont., has been appointed Assistant Master Mechanic, Ontario Division, and his former position has been abolished. Office, Toronto.

H. J. PAGE has been appointed Chief Special Agent, Lines East of Port Arthur, reporting to the General Manager, Eastern Lines. Office, Toronto.

G. H. HEDGE, heretofore Master Mechanic, Central Division, Winnipeg, has been appointed General Master Mechanic, Western Lines. Office, Winnipeg.

All communications are addressed to the office of the Superintendent of Rolling Stock, Winnipeg, as heretofore.

H. A. ENGLISH, heretofore Locomotive Inspector, Winnipeg, has been appointed Master Mechanic, Central Division, vice G. H. Hedge, promoted. Office, Winnipeg.

The position of Locomotive Inspector, heretofore occupied by him, has been abolished. All matters pertaining to the examination and engagement, or promotion of locomotive men and their general seniority rights, will be handled by the General Master Mechanic, Western Lines. All communications are addressed to the office of the Superintendent of Rolling Stock, Winnipeg.

H. L. VERCOR has been appointed Special Engineer, Lines West of Port Arthur, Ont. Office, Winnipeg.

W. T. MOODIE, heretofore Engineer Maintenance of Way, Winnipeg, has been appointed Division Engineer, Central Division. Office, Winnipeg.

T. LUCAS, heretofore Engineer of Maintenance of Way, west of Winnipeg, has been appointed Lease Engineer, Lines West of Port Arthur, Ont. Office, Winnipeg.

H. P. BLAKE, heretofore Superintendent of Water Supply and Heating, has had his title changed to Engineer Water Supply and Heating. Office, Winnipeg.

W. A. WHYTE, heretofore City Freight Agent, Calgary, Alta., has been appointed District Freight Agent, Regina, Sask., vice B. R. Marsales, transferred.

T. J. BROWN, heretofore Chief Dispatcher, District 1, Central Division, Port Arthur, Ont., has been appointed Superintendent, District 2, Western Division, vice B. T. Chappell, transferred. Office, Saskatoon, Sask.

A. MacRAE is reported to have been appointed Chief Dispatcher, District 2, Western Division, vice J. W. Crane, transferred. Office, Saskatoon, Sask.

A. CAMPBELL, heretofore in the General



G. H. Hedge,  
General Master Mechanic, Western Lines  
Canadian Northern Railway.

Freight Office, Winnipeg, has been appointed City Freight Agent, Saskatoon, Sask., vice H. S. Grainger, transferred.

B. R. MARSALES, heretofore District Freight Agent, Regina, Sask., has been appointed District Freight Agent, Calgary, Alta., vice A. Brostedt, transferred.

R. E. JOHNSTON, heretofore City Freight Agent, Edmonton, Alta., has been appointed City Freight Agent, Calgary, Alta., vice W. A. Whyte, transferred.

A. T. FRASER, heretofore District Engineer, Edmonton, Alta., has been appointed Division Engineer, Western Division. Office, Edmonton, Alta.

H. S. GRAINGER, heretofore City Freight Agent, Saskatoon, Sask., has been appointed City Freight Agent, Edmonton, Alta., vice R. E. Johnston, transferred.

D. R. CAMPBELL, heretofore Superintendent of Construction, Western Lines, has been appointed General Superintendent, Pacific Division. Office, Vancouver.

A. BROSTEDT, heretofore District Freight Agent, Calgary, Alta., has been appointed District Freight and Passenger Agent, Vancouver, B.C.

B. T. CHAPPELL, heretofore Superintendent, District 2, Saskatoon, Sask., has been appointed Superintendent, Pacific Division. Office, Kamloops Jct., B.C.

J. W. CRANE, heretofore Chief Dispatcher, District 2, Saskatoon, Sask., has been appointed Chief Dispatcher, Pacific Division. Office, Kamloops Jct., B.C.

C. H. QUANTIC, heretofore Master Mechanic and Trainmaster, Northern Construction Co. in British Columbia, has been appointed Master Mechanic, Pacific Division, C.N.R. Office, Port Mann, B.C.

**Canadian Pacific Ry.**—J. McNAUGHT, Solicitor, Montreal, has been granted extended leave of absence, and has gone to England, to enlist for active service.

GORDON ST. GEORGE SPROULE has been appointed Engineer of Tests, vice E. B. Tilt, resigned. Office, Montreal.

C. H. TOWLE has been appointed Assistant Superintendent, District 1, Atlantic Division, vice I. B. Merriman. Office, Brownville Jct., Me.

K. D. JOSEPH has been appointed Assistant Trainmaster, District 1, Atlantic Division, Brownville Jct., Me.

J. BOYD has been appointed Car Foreman, Trenton, Ont., vice W. Walsh, transferred.

W. WALSH, heretofore Car Foreman, Trenton, Ont., has been appointed Car Foreman, Union Station, Toronto, vice J. E. Hughes, transferred.

J. BANNON, heretofore Car Foreman, Lambton, Ont., has been appointed Car Foreman, West Toronto.

E. J. MURPHY, heretofore Assistant Locomotive Foreman, Lambton, Ont., has been appointed Locomotive Foreman there, vice F. Ronaldson, whose appointment as District Master Mechanic, Farnham, Que., was announced in our last issue.

J. TREGASKIS, heretofore fitter, has been appointed Assistant Locomotive Foreman, Lambton, Ont., vice E. J. Murphy, promoted.

J. JOLLY has been appointed Car Foreman, Lambton, Ont., vice J. Bannon, transferred.

The duties of the Resident Engineer at Sudbury, Ont., hitherto carried out by H. J. Black, whose appointment to other service was announced in our last issue, have been absorbed in those of H. R. MILES, Assistant Division Engineer, Lake Superior Division, North Bay, Ont.

J. E. HUGHES, heretofore Car Foreman, Union Station, Toronto, has been appointed Car Foreman in charge of general repairs, North Bay, Ont., vice J. Cowley, on extended leave of absence.

C. H. FOX, heretofore Assistant Division Engineer, Winnipeg, has been appointed Resident Engineer, District 2, Manitoba Division, vice E. L. Landorph, appointed Resident Engineer, District 1, Manitoba Division, Kenora, Ont., as announced in our last issue, and his former position has been abolished. Office, Winnipeg.

F. PATERSON, heretofore relieving station master, Winnipeg, has been appointed station master there.

W. B. RUFF, heretofore relieving station master, Winnipeg, has been appointed night station master there.

S. A. PIGGOTT, heretofore Foreman, Repair Yard, Winnipeg, has been appointed Car Foreman, Moose Jaw, Sask., vice R. Cooper, resigned.

J. H. BAKER, heretofore Roadmaster, Medicine Hat, Alta., has been appointed Roadmaster, Crownsnest Subdivision, vice J. Carlson. Headquarters, Lethbridge, Alta.

D. G. MacDONALD, heretofore Locomotive Foreman, Macleod, Alta., has been appointed



**A. H. Hall**, Foreman, Lethbridge, Alta., vice A. Hall, assigned to other duties.

**S. PRASER**, heretofore Locomotive and Car Foreman, Coronation, Alta., has been appointed Locomotive Foreman, Macleod, Alta., vice D. G. Macdonald, transferred.

**P. S. BEATT**, heretofore machinist, Ogden, Alta., has been appointed Locomotive and Car Foreman, Coronation, Alta., vice S. Praser, transferred.

**A. H. NOWELL**, heretofore Erecting Shop Foreman, Ogden, Alta., has been appointed Locomotive Foreman, Cranbrook, B.C., vice J. M. Boyes, assigned to other duties.

The position of Storekeeper, British Columbia Lake and River Service, Nelson, B.C., heretofore held by G. W. COOPER, has been abolished and he has been assigned to other duties.

**Canadian Pacific Ocean Services, Ltd.** Capt. J. V. FORSTER, R.N.R., heretofore Marine Superintendent, C.P.R. steamships, Liverpool, England, has been appointed General Superintendent, Canadian Pacific Ocean Services, Ltd., formed by the C.P.R. steamships and the Allan Line. Office, Liverpool, Eng.

**Delaware and Hudson Co.**—C. A. DOUGLASS has been appointed Manager, Hotel and Dining Service Department, vice A. Thieriot, deceased. Office, Albany, N.Y.

**Grand Trunk Ry.**—W. S. COOKSON, heretofore Assistant General Passenger Agent, has been appointed General Passenger Agent. Office, Montreal.

**C. W. JOHNSTON**, heretofore Assistant to Passenger Traffic Manager, has been appointed Assistant General Passenger Agent, vice W. S. Cookson, promoted, and his former position has been abolished. Office, Montreal.

**J. H. GUESS**, General Purchasing Agent, Montreal, having been granted leave of absence until the end of the year, the department is in charge of R. JOHNSON, Assistant General Purchasing Agent.

**W. WALKER**, heretofore Assistant Engineer, Ottawa Division, Ottawa, Ont., has been appointed Assistant Land Commissioner. Office, Montreal.

**G. F. WOODSUM**, heretofore Locomotive Foreman, Island Pond, Vt., has been appointed Assistant Shop Foreman, Portland, Me.

**R. GARDINER**, heretofore charge hand, Belleville, Ont., has been appointed Locomotive Foreman, Island Pond, Vt., vice G. F. Woodsum, transferred.

**E. WALTON**, heretofore clerk, has been appointed chief clerk to Superintendent of Transportation, Montreal, vice C. M. Walton, promoted.

**C. M. WALTON**, heretofore chief clerk to Superintendent of Transportation, Montreal, has been appointed Assistant Trainmaster, Districts 1 and 2, Montreal Division. Office, Island Pond, Vt.

**H. MOWAT**, heretofore instrument man, Belleville, Ont., has been appointed Assistant Engineer, Ottawa Division, vice W. Walker, promoted. Office, Ottawa, Ont.

**G. A. STOKES**, heretofore Division Agent, Ontario Lines, Toronto, has been appointed Superintendent of Sarnia Tunnel Terminals, vice F. J. McKee, promoted. Office, Port Huron, Mich.

**F. J. MCKEE**, heretofore Superintendent of Sarnia Tunnel Terminals, Port Huron, Mich., has been appointed Assistant Terminal Superintendent of Detroit Terminals. Office, Milwaukee Jct., Mich.

**Grand Trunk Pacific Ry.**—W. P. HINTON, heretofore Assistant Passenger Traffic Manager, G.T.R. and G.T.P.R., Montreal, has been appointed Traffic Manager, G.T.P.R. and Grand Trunk Pacific Coast Steamship Co., in charge of freight and passenger traffic, and the positions of Passenger Traffic Manager, heretofore held by G. T. Bell, Mont-

real, and Assistant Passenger Traffic Manager, heretofore held by W. P. Hinton, Montreal, have been abolished. Office, Winnipeg. G. T. Bell continues as Passenger Traffic Manager, G.T.R., Montreal.

**G. A. McNICHOLL**, heretofore Commis-



W. R. Devenish, A.M.Can.Soc.C.E., Superintendent, District 2, Intercolonial Railway.



C. W. Johnston. Assistant General Passenger Agent, Grand Trunk Railway.

sioner of Colonization and Industries, Prince Rupert, B.C., has been appointed Assistant General Freight and Passenger Agent, G.T.P.R. and Grand Trunk Pacific Coast Steamship Co., with jurisdiction west of Prince George, B.C., and Pacific coast points, Portland, Oregon, and north, including Alaska

and Yukon, and his previous position has been abolished. Office, Prince Rupert, B.C.

**Great Northern Ry.**—C. L. BANKSON has been appointed Assistant Purchasing Agent, vice A. Watson. Office, Seattle, Wash.

**Intercolonial Ry.**—W. R. DEVENISH, A.M.Can.Soc.C.E., heretofore Principal Assistant Engineer, Canadian Government Railways, Moncton, N.B., has been appointed Superintendent, District 2, vice Evan Price, deceased. Office, Campbellton, N.B.

**W. R. FITZMAURICE**, Assistant Superintendent, Moncton-St. Flavie District, Newcastle, N.B., who has been acting as Superintendent, District 2, Campbellton, N.B., since the death of Evan Price, has resumed his former position.

**C. D. BOVARD**, station agent, Moncton, N.B., who was appointed recently acting Assistant Superintendent, Moncton-St. Flavie District, Newcastle, N.B., during the absence of W. R. Fitzmaurice, has returned to Moncton, N.B.

**P. CARLISLE** has been appointed Roundhouse Foreman, Moncton, N.B., vice J. E. Stronach, now employed as locomotive driver.

**F. CARROLL**, heretofore charge hand, frog shop, has been appointed Foreman Blacksmith, Moncton, N.B., vice A. Stockall, retired on the Provident Fund.

**S. B. WASS**, A.M.Can.Soc.C.E., Assistant Superintendent, District 2, has had his jurisdiction extended to include the Fredericton and Loggieville Subdivisions. Office, Fredericton, N.B.

**T. RYAN** has been appointed Roundhouse Foreman, Riviere du Loup, Que., vice V. Saindon, assigned to other duties.

**V. SAINDON**, heretofore Roundhouse Foreman, Riviere du Loup, Que., has been appointed charge hand there.

See also Canadian Government Railways.

**Kent Northern Ry.**—T. O. MURRAY, heretofore Manager, Richibucto, N.B., has resigned.

**National Transcontinental Ry.**—The Grand Trunk Pacific Telegraph Co. has been appointed Supervisory Agent of Telegraphs between Moncton and Winnipeg, including the Lake Superior Branch to Fort William, with jurisdiction over all matters appertaining to the construction and maintenance of telegraph and telephone lines and the operation of railway and commercial telegraphs. Following are the G.T.P.T. Co.'s officers having jurisdiction.—H. HULATT, Manager of Telegraphs, and T. RODGER, Supervisor, Montreal; F. T. CALDWELL, Division Superintendent of Telegraphs, Winnipeg.

See also Canadian Government Railways.

**Pere Marquette Rd.**—A. C. RHODES has been appointed Auditor of Station and Miscellaneous Accounts, vice S. T. Billingsly, resigned. Office, Detroit, Mich.

**Wabash Ry.**—E. F. KEARNEY, heretofore one of the receivers, and President, of the Wabash Rd., has been elected President, Wabash Ry., the successor of the old company. Office, St. Louis, Mo.

**W. S. PIERCE**, heretofore Chairman of the Board, Wabash Rd., has been elected Chairman of the Board, Wabash Ry. Office, New York, N.Y.

**J. E. TAUSSIG**, heretofore General Superintendent, Texas and Pacific Ry., Dallas, Tex., has been appointed Assistant to the President, W. Ry. Office, St. Louis, Mo.

The following general officers, who held similar positions under the Wabash Rd. Co., have also been appointed.—J. L. MINNIS, General Solicitor; S. E. COTTER, General Manager; F. L. O'LEARY, Local Treasurer; T. J. TOBIN, Auditor; W. C. MAXWELL, General Traffic Manager; T. J. FRIER, Purchasing and Supply Agent; and Dr. M. P. PARRISH, Chief Surgeon, all with offices at St. Louis, Mo.



## Freight and Passenger Traffic Notes.

All G.T.R. trains between Montreal and Ottawa now stop at St. Henri, Montreal.

Northern Pacific Ry. trains 19 and 20, between Winnipeg, Man., and St. Paul, Minn., were discontinued Oct. 24.

Canadian Pacific Ry. trains 61 and 62 between Winnipeg and Moose Jaw have been discontinued for the winter.

Canadian Pacific Ry. has withdrawn the Vancouver-Arrowhead and Penticton-Spences Bridge sleeping car service.

Canadian Pacific Ry. trains 63 and 64 between Calgary, Alta., and Spokane, Washington, have been discontinued for the winter.

The Canadian Northern ticket and freight office in Regina, Sask., has been moved from Scarth Ave. to the Western Trust Building, Eleventh Ave.

The Grand Trunk Pacific Ry., starting Nov. 24, added a tourist car to the equipment of its transcontinental trains running in and out of Prince Rupert, B.C.

The Board of Railway Commissioners has authorized a standard freight tariff of 3c. a mile on the Canadian Northern Ry. from Edmonton to Tollerton, Alta., and of 4c. a mile from Tollerton to Vancouver, B.C.

The Grand Trunk Pacific Ry. will until Dec. 31, issue from points on its lines, special round trip tickets to all Atlantic sea ports in connection with all transatlantic steamship lines.

Canadian Pacific Ry. trains 1 and 2 now carry first-class and colonist cars through between Montreal and Vancouver, and also haul the St. Paul-Seattle standard and tourist sleeping cars west of Moose Jaw.

The Canadian Northern Ry. through passenger train service between Toronto and Winnipeg was put in operation Nov. 1. Trains left each point on Nov. 1, and arrived at their respective destinations on Nov. 3.

The Minneapolis, St. Paul & Sault Ste. Marie and Canadian Pacific trains 13 and 14, between St. Paul, Minneapolis and the Pacific coast have been discontinued for the winter. Trains 1 and 2 now make the St. Paul and Minneapolis connections at Moos Jaw, Sask.

Canadian Pacific Ry. trains 3 and 4 no longer carry through standard and tourist sleepers for Montreal, on account of the withdrawal of trains 5 and 6 east of Sudbury, but haul a Winnipeg-Fort William standard sleeping car in addition to their other equipment.

Starting Nov. 2, the Edmonton, Dunvegan and British Columbia Ry. changed the time of its bi-weekly service from Edmonton to Macleannan, Alberta, from 7.30 a.m. to 8 p.m., and added a sleeping car to its train equipment. The corresponding train from Macleannan leaves in the evening as heretofore, and also has a sleeping car attached.

The Pacific Great Eastern Ry. winter train service from North Vancouver, as announced Nov. 1, will give an approximately hourly service to Dundarave during the business hours morning and evening; two trains daily each way between North Vancouver and Whytecliffe, and three trains a day each way between North Vancouver and Caul fields.

Canadian Pacific Ry. passengers between Smiths Falls, Carleton Place, Ont., and points east thereof to Port Arthur, Ont., and points west thereof, may now travel either via main line through Renfrew and North Bay, or via Toronto and Sudbury, but must designate which route they desire at

time of purchase, and tickets must read accordingly.

Canadian Pacific Ry. trains 5 and 6, between Montreal and Sudbury, connecting at Sudbury with trains 3 and 4, have been withdrawn for the winter. Passengers between Montreal and Port Arthur or points beyond can leave Montreal in the morning by train 19 and connect at Toronto with train 3, but east bound train 4 does not make connection at Toronto with day train for Montreal and beyond.

The G.T.R. is enforcing an order under which passengers must show their tickets to the conductor or brakeman before entering the train on which they are to travel. In the larger stations the train staff occupy positions in front of the car steps to attend to this work, but on local trains, and between points, one or other will stand on the platform so as to command the entrance to two cars.

The Pere Marquette Rd. states in connection with the London & Port Stanley Ry. that in consequence of the line having been taken over by the City of London it entirely withdrew from its operation on July 1 and made an interchange arrangement for the L. & P.S.R. to handle its traffic for points between London and Port Stanley. The Pere Marquette trains enter the same station (Kains St.) at St. Thomas as is used by the L. & P.S.R.

The G.T.R. has cancelled the following trains:—Leaving Montreal for Vaudreuil 1.20 p.m. on Saturdays; leaving Montreal 1.30 daily except Saturday and Sunday for Pointe Claire; leaving Montreal 4.10 p.m. daily except Sunday for Pointe Claire; with the corresponding trains on the same days into Montreal; leaving Montreal daily except Sunday for Rouse's Point and Plattsburg via. Dolson Jct., and Delaware and Hudson Rd., with the corresponding train from Plattsburg arriving in Montreal 9.35 a.m.

The Board of Railway Commissioners has approved a standard sleeping and parlor car tariff for the Edmonton, Dunvegan and British Columbia Ry. The rates for a lower berth are 8 mills a mile, with a minimum charge of \$1.50, while the charge for the upper berth is to be 80% of that for lower berths, with a minimum charge of \$1.25; the drawing room fare is 3½ times that for the lower berth, with a minimum charge of \$6; seats in parlor cars two-thirds of a cent a mile, with a minimum fare of 25c.

The Canadian Pacific Ry.'s trains 19 and 20, "The Canadian," between Montreal and Chicago, now carries Mount series compartment observation cars, instead of Glen series, between Toronto and Chicago only, instead of between Montreal and Chicago, and library observation parlor cars between Montreal and Toronto. Trains 21 and 22 carry Mount series compartment observation cars instead of Glen series between Montreal and Toronto. Mount cars each contain one drawing room and three compartments with no smoking room. Glen cars contain one drawing room, one compartment and a smoking room.

The Mayor and the President and Vice President of the Quebec Board of Trade of Quebec waited on the Dominion Government with a number of other business men, Nov. 2, to ask for lower freight rates on the National Transcontinental Ry. to Quebec as compared with Montreal, and for a passenger train service between Quebec and Cochrane. The deputation asked for a freight tariff between Quebec and Winnipeg and intermediate points based on mileage as compared with existing Montreal rates, and

a tri-weekly passenger train service between Quebec and Cochrane connecting with, and equal in speed and equipment to the service given between Cochrane and Winnipeg. These claims it was stated were endorsed by the Halifax and St. John Boards of Trade.

## Railway Finance, Meetings, Etc.

**Canadian Northern Ry.**—The directors have announced that the earnings for the year ended June 30 were insufficient to enable payment to be made of the interest, which was due, Nov. 2, on the 5% income charge convertible debenture stock.

**Canadian Pacific Ry.**—There has been deposited with the Secretary of State at Ottawa copy of a lease by the Shuswap and Okanagan Ry. of its line to the C.P.R.

A duplicate copy of an indenture dated Sept. 22, made between Sir Charles Tupper, Sir Thomas Skinner and G. McL. Brown on the one part and the C.P.R. on the other has been filed with the Secretary of State at Ottawa. The deed releases and discharges a mortgage entered into July 25, 1885, between the C.P.R. and Baron Wolverton, Baron Revelstoke, and Sir Charles Tupper as trustees, for the purpose of securing C. P.R. first mortgage bonds for \$35,000,000, and reconveys to the company the railway and other property specifically mentioned as security.

**Canadian Pacific Ry.**—The directors on Nov. 8 declared a dividend of 2½% on the common stock for the quarter ended Sept. 30, being at the rate of 7% per annum from revenue and 3% per annum from special income account, payable Dec. 1, to shareholders of record on Nov. 30.

**Grand Trunk Ry., Montreal press dispatch.**—Blair & Co., of New York, have purchased from the G.T.R. and resold, \$4,000,000 two year 5% notes, dated Nov. 1, 1915. Principal and interest are payable in Montreal or New York, at the holders' option. The notes are a direct obligation of the G.T.R., and are specifically secured by pledge with the Bankers' Trust Co. trustee of \$5,254,632 in Grand Trunk Pacific Railway 4% sterling mortgage bonds due Jan. 1, 1962.

**Temiscouata Ry.**—Net earnings for August \$3,234 against \$3,667 for Aug. 1914. Aggregate net earnings for two months ended Aug. 31, \$7,035.

**The Wabash Ry. Co.** has been incorporated in the State of Indiana, with a capital of \$143,460,000, and the Equitable Trust Co. of New York has been ordered by the Federal District Court at St. Louis, Mo., to turn over the entire property purchased recently at the foreclosure sale for \$18,000,000, to the reorganization committee. The directors for the first year are,—S. Armstrong, H. B. Campbell, R. Golet, L. Greer, E. F. Kearney, W. C. Maxwell, G. W. Murray, R. H. Neilson, J. C. Otteson, W. S. Pierce, L. Rhoades, A. E. Stuart, W. V. Stuart, J. E. Taussig and H. R. Winthrop. The new company has been refused permission to carry on its business in Missouri, as under a statute of 1913, it is provided that no company not registered under Missouri laws can be authorized to carry passengers or freight from one part of the state to another. A speedy settlement of the matter is anticipated, and in the meantime the company is operating under its constitutional rights.

**The G.T.R. Barrie Division Railwaymen's Patriotic Association** has voted \$600 to the Fields Comfort Commission, and \$200 to the British Red Cross Association. Two motor ambulances, valued at \$3,600, have already been given to the Canadian Red Cross Society.



# Electric Railway Department

## Rolling Stock for Three Rivers Traction Company.

The Three Rivers Traction Co., which has built a circuit electric railway in Three Rivers, Que., and has a suburban line projected to Cap de la Madeleine, a total length of about seven miles, has received recently

ency exit door controlled by the motorman from his position in the front vestibule. There is a circular seat running around the rear vestibule which accommodates five passengers. The seats are the builder's

push buttons and buzzers, the current being procured from batteries.

The cars are heated with cross seat heaters with ten heaters per car. The cars are mounted on radiax trucks, 12 ft. wheel base, with 33 in. cast iron wheels and 4½ in. hot rolled axles. Each car is equipped with two Westinghouse 121-B-2 motors, with 1 K-10 controller, Westinghouse schedule S-M-1 straight air brake equipment. H-B life guards, and the Trolley Supply Co.'s Ideal trolley catcher. The bodies are painted olive green with gold lettering and striping.

The combination sweeper and tower car is the builder's standard single truck sweeper with a tower built on one end. The body or cab is of wood construction, built on a heavy wood underframe, which is reinforced with heavy steel plates. The roof is of the turtle back type, supported on steel carlines. The interior of the body is in ash, natural finish. The truck is the builder's standard design, which is extra heavy. The brooms and broom operating machinery are of the builder's standard construction. The brooms are mounted on a heavy shaft, which runs in bearings which slide up and down in heavy malleable iron guides. They are driven by a heavy chain and sprocket drive from a main driving shaft, which is directly connected to the motor by a gear and pinion drive, having the same gear ratio as the truck motors. Each set of brooms can be cut in or out by clutches on the main driving shaft. The brooms are raised and lowered by hand winches in the cab, a separate



Three Rivers Traction Co.'s Passenger Car.

six single end, single truck, one man, near side cars, and a single truck combination sweeper and tower car, from the Ottawa Car Manufacturing Co. The general dimensions of the passenger cars are as follows:

Length of body .....	21 ft.
Length of front vestibule .....	6 ft. 2 ins.
Length of rear vestibule .....	4 ft.
Length over all .....	32 ft. 2 ins.
Width over all .....	8 ft. 6 ins.

The car bodies are of semi-convertible type, wood construction, built specially for one man, near side operation, and single end control. The sides are straight and sheeted vertically with narrow tongue and groove poplar sheeting. There are eight double sash windows on each side of the body. Top sash are made stationary and bottom sash made to raise to open. The roof is of arch type, with ventilators in each side, also one in front vestibule. The underframe is of composite construction, having wood sills reinforced with steel plates, which are rivetted together to form a complete steel frame. The flooring is ¾ in. thick tongue and groove, hard yellow pine covered, with hardwood floor matting laid lengthwise in the aisle. The interior trimming is red cherry. The front vestibule is made extra long and step opening extra wide, so that entrance and exit can be made by same. Each opening has an individual folding door and step of the builder's standard construction, so arranged that when the motorman opens the door, the step drops, and when he closes the door the step folds up. The doors are arranged so that the motorman can operate them singly or both together.

The front vestibule is equipped with brass p.a.y.e. rails, folding curtain behind motorman, and the Coleman Fare Box Co.'s no. 4 type of stationary fare box. The rear vestibule is circular in shape, with an emerg-



Three Rivers Traction Co.'s Passenger Car.

standard stationary type, covered with twill weave rattan and with brass grab handle on back. The curtains are pantasote mounted on metal rollers. The cars are also equipped with the builder's standard

winch being provided for each set of brooms. The tower has a working platform about 6 ft. by 5 ft. wide, with a folding fence all around it. The tower is raised and lowered by a heavy winch inside the



cab. The brooms are driven by one Westinghouse 101-B-2 motors. The truck is equipped with a Westinghouse 101-B-2 motors. The truck is equipped with a Westinghouse 101-B-2 two motor double end equipment, with K-11 controllers on the truck motor circuit and a R-28 controller on the broom motor circuit. The body is painted olive green with gold numbers, the tower is finished naturally, and the truck is painted black.

### A Public Utilities Commissioner on Thoughtless Complaints.

In the Manitoba Public Utilities Commission's report for the year ended Mar. 30, 1914, only issued recently, the sole Commissioner, H. A. Robson, who has now resigned to re-enter the practice of law, as General Counsel for the Union Bank of Canada, says:—

"There have been many applications to this Commission by way of complaints against street railway transportation systems. Some of these applications have been lodged by the municipal authorities as representing the public. The companies involved are the prominent street railway utility, the Winnipeg Electric Ry. Co., and its associated companies, the Winnipeg, Selkirk and Lake Winnipeg Ry. Co. and Suburban Rapid Transit Co. These complaints fall under two heads. One class embraces troubles due to the act or neglect of individual employees. The companies are responsible for the conduct of their servants. Street railway operation requires a great number of men. The public are too apt to judge a whole system by isolated acts of the small percentage of men under standard, who, even with great care in selection, will always be found where a large number are employed. Complaints of this nature are dealt with as they arise. The companies deal with them promptly and insist upon proper discharge of duty by employees. Any one who would judge fairly of the operations of any public utility, and more especially street railway and telephone systems, must remember this human element. Taking our electric railway and telephone systems as a whole, any weaknesses of this nature are no more than exist in other systems, or in other labor employing undertakings, and are probably considerably less.

"The other class of applications affecting electric railways are those regarding improvements in the way of new lines, or equipment, or increased service. These demands are often made thoughtlessly. Improvements involving substantial capital expenditures are demanded without regard to financial possibilities or the likelihood of operating loss. The experience has been in municipalities outside of Winnipeg, first a demand for lower fares, regardless of rates defined in contracts, and then demands for construction of new lines or rebuilding existing ones or improving service. These rate reductions have been substantial, and have been granted by the companies after some pressure, but not altogether by compulsion. There is a want of appreciation of the fact that in sparse communities reduction of rates retards new construction and service improvement. It takes away the financial basis for a commission's order for new construction or improved service. There is a further tendency to look at the rate of dividend paid by the electric railway companies and draw conclusions superficially. To regulate a utility company so severely as to restrict its productiveness to a current commercial rate of interest, is to stifle this necessary class of enterprise.

These various considerations are frequently forgotten or deliberately overlooked by persons, sometimes in fact by elected representatives, who unwarrantably create discontent against what, considering rates and street facilities, is reasonable public service. A commission is bound to meet and deal with all these matters with a due regard to public service, but at the same time to withstand attempts to oppress a public utility through the medium of the commission. Applications before this Commission since its institution, some of which are described in this report, have produced many occasions of difficulty, because of circumstances such as those above described."

### The Outside Running Board on Toronto Railway Cars.

The Toronto Ry. applied to the Ontario Railway and Municipal Board, Nov. 1, for an order under sec. 107 of the Ontario Rail-

which the company operates its street cars."

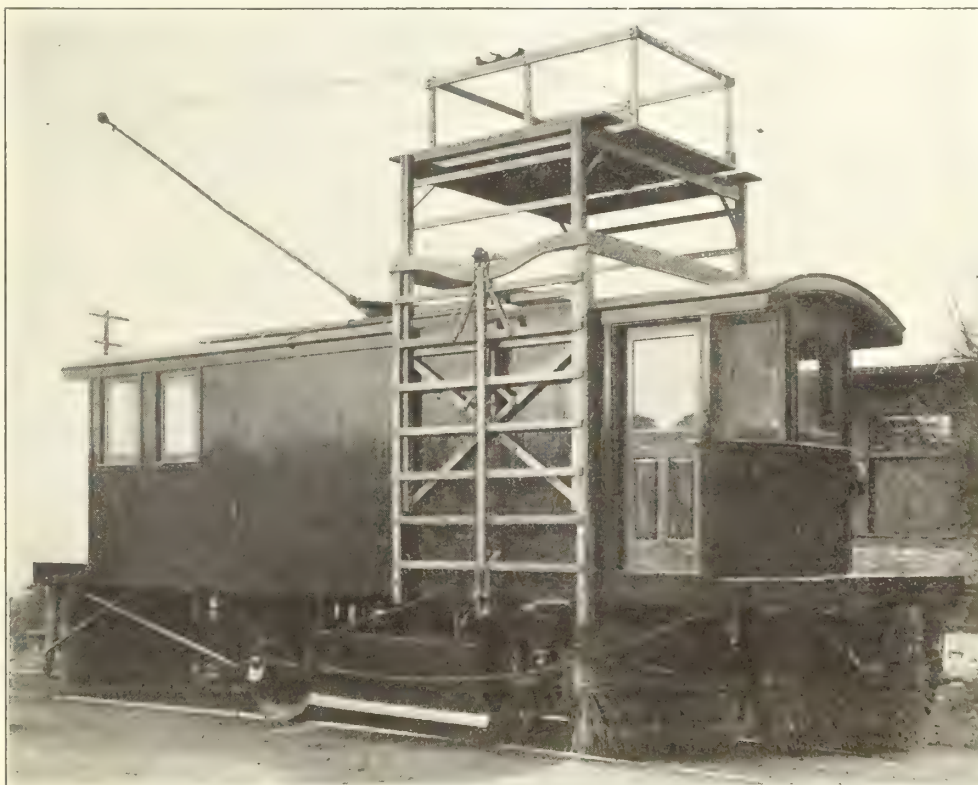
Sec. 107 of the Ontario Railway Act, referred to in the application, is as follows,—

1. Open or summer cars for use upon a railway operated by electricity, or upon a street railway, shall be so arranged or constructed that the seats for passengers will face the front of the car when in motion, and an aisle sufficiently wide to allow the passage of the conductor shall be provided in every such car, and no open or summer cars shall be used unless so arranged.

2. The side steps on such cars shall be so constructed, if in the opinion of the Board it is practicable, that passengers will be prevented from standing upon the same while the car is in motion.

3. The Board may relieve a company from the obligation imposed by subsec. 1 as to any route upon which the space between the tracks, commonly called the devil strip, is not sufficiently wide to permit cars so arranged or constructed to be used.

4. In all cases of dispute between a railway company and a municipal corporation



Three Rivers Traction Co.'s Combination Sweeper and Tower Car.

way Act, relieving it from the operation of cars with seats facing front and with an aisle through the centre sufficiently wide for the passage of the conductor, owing to the inability of the company to operate such cars on account of the narrow devil strip. The Board issued the following order, Nov. 2,—“Upon hearing counsel for the applicants and respondents and the Board having been investigating the question of the change of the type of summer cars in use on the applicant's railway, and having conducted experiments and inspected the tracks and devil strips of the said railway company's system, and the Board being of the opinion that the space between the tracks, commonly called the devil strip, is not sufficiently wide to permit cars with seats for passengers facing the front with an aisle sufficiently wide to allow the passage of the conductor, the Board orders that the applicants be hereby relieved until a final disposition of this application, from the obligation imposed by sub-sec. 1, of sec. 107, Ontario Railway Act, to all routes upon

or any person making complaint to the Board, as to the sufficiency of width, practicability of construction of cars, or as to any other matter or thing mentioned in this section, the order of the Board shall be final and shall not be subject to appeal, and any order made by the Board as to any such matter shall be carried out and fulfilled by the company, and the municipal corporation or either or both of them according to its terms.

The Mayor of Toronto, in one of his characteristic interviews, has declared that the city will appeal to the Legislature.

The Ontario Railway and Municipal Board, on Nov. 22, issued an interim order abolishing the outside running board and directing the City of Toronto and the company to confer, within 30 days, as to the best type of car to be substituted, and if they fail to agree, then the city will be given an additional 15 days to suggest an alternative type of car. It was announced that the city would refuse to confer with the company on the matter.



### The Toronto-Railway Extension on North Yonge Street.

In compliance with the Ontario Railway and Municipal Board's order to the Toronto Ry. to extend its track from the end of its present track on Yonge St., Toronto, north-ward to Farnham Ave., the terminus of the Toronto and York Radial, the city, as has already been mentioned, has decided to appeal to the Imperial Privy Council against the Board's judgment, and has obtained full sanction for its bond for \$2,000 to prosecute such appeal. The Toronto Ry., on Nov. 1, applied to the Ontario Railway and Municipal Board for a further order to enforce the original order, and to compel the city to carry on and complete the preliminary work necessary for the laying of the tracks. It was argued on behalf of the company that the city's appeal to the Privy Council did not involve a stay of proceedings, and that the city should be compelled to proceed with the construction of the foundation. It was also stated that the company, if allowed to complete the laying of the track, would, if the Privy Council reversed the Board's judgment, be willing to turn over the extension to the city at cost.

The Chairman of the Board, D. M. McIntyre, K.C., stated that the validity of the Board's order rested on the construction of the agreement between the city and the company, and he did not think that the Board could facilitate the carrying out of the order, if there is any doubt as to the legal basis on which that order rests.

### Bion J. Arnold on Municipal Ownership.

Some of the reports of an address by Bion J. Arnold, of Chicago, before the American Electric Railway Association at San Francisco recently, made it appear that he favored the municipal ownership of electric railways, and believed such ownership inevitable. In a subsequent interview given to a Los Angeles paper, he stated that the reports which made him say that municipal ownership of utilities is inevitable are incorrect. He continued,—"What I did say was, Let us spend no more time worrying about whether immediate municipal ownership or ultimate municipal ownership is the thing the people want. Chicago once tried to get municipal ownership, but failed because the city could not raise the money, and a study of the indebtedness and bond limits of other cities present like conditions. Time will therefore settle whether the immediate municipal ownership or the ultimate municipal ownership plank, or neither, is to go into municipal platforms. The point I want to make is that we cease wasting our energies in opposing a public movement that will surely come, in spite of opposition, if it is economically sound, and direct our energies toward the terms of the purchase clause and the conditions of a resettlement franchise. It is time for us to prove to the courts and commissions that railway investment can be made practically as sound as what are termed savings bank investments. Several plans have been worked out, notably those which are included in my reports on Chicago, Kansas City and San Francisco. They differ somewhat in franchise conditions, but the central idea is to put tangible property behind intangible values, so that if ultimate municipal ownership should prove to be the policy of the country, it will come without destroying investment values, or curtailing service to the public during the time of its coming.

"The only advantage of municipal ownership and operation over private ownership, from a financial standpoint, is the ability of

a municipality, in most cases, to borrow money at a lower rate of interest than private corporations or individuals are willing to accept for their money when it is to be invested in public utilities. Therefore, if the municipality will operate an electric railway as efficiently and as economically as a private corporation, the municipally owned and operated railway will be the cheaper to the community. But the question is: Will the municipality so manage the property? Inasmuch as the margin is only the difference in the cost of money, it may easily be absorbed by inefficient management, through the loading of the municipally owned road with excessive operating expenses in the way of labor and other considerable items that may enter into the management. The San Francisco experiment is being watched closely and up to date it has been conducted and operated efficiently and honestly, although there has already been a tendency toward the construction of unprofitable extensions and toward a reduction of the fare. The question is whether the municipality will continue to manage the property as well as it has in the past. The advantages that I have pointed out above are purely theoretical advantages. I cannot emphasize this too strongly. In many cases they have proved to be no advantages at all in actual practice. The disadvantages of municipal ownership are too obvious and too well known to require reiteration."

### Transportation of Postmen in Sherbrooke.

The Post Office Department having refused to pay the compensation asked by the Sherbrooke Ry. & Power Co. for carrying postmen on its cars, they are now travelling on ordinary tickets the same as any other passengers. The company had a contract with the Department for four years from Sept. 1, 1911, to carry postmen at \$25 each per year. Prior to the expiry of this contract the Department was informed that a new one could not be entered into at less than \$35 per postman per year, and as that figure was not acceded to, the company refused to enter into a new contract.

The Department's contention that postmen should be carried at a less rate than any other passengers is an utterly indefensible one, as the Dominion Government has granted no aid whatever to electric railways and is not entitled to ask any favors from them. As a matter of fact, postmen with their mail bags, etc., generally take up more room than ordinary passengers, and they should certainly pay at least the same fare. There is no reason why Government employees should be carried at any less rate than the employees of any corporation or firm.

### Traffic Commission Proposed for Toronto.

—The Mayor of Toronto announced, Nov. 12, that the report of the engineers for a comprehensive street railway system which will provide for proper entrance for the radial lines, all to work in conjunction with the projected harbor improvements, was practically completed, and it was expected it would be submitted to the City Council about Dec. 1. He also stated that he would then advocate the appointment of a traffic commission to deal with the whole matter, and of this board, the engineers responsible for the report to be members. These are, F. A. Gaby, Hydro Electric Power Commission of Ontario; E. L. Cousins, Toronto Harbor Commission, and R. C. Harris, Commissioner of Works, City of Toronto.

### City of Toronto Sues Toronto Railway Company.

Claiming \$95,859 as its percentage of the Toronto Ry. receipts for May last, the city has entered an action at Osgoode Hall to recover the amount. The action is the sequel to some little difference between the parties over payments for track repairs, etc. The company some time ago presented a bill to the city for \$74,000 for road work, but the Works Commissioner refused to pay the full amount, and the city sent a cheque for \$52,000 in payment. This cheque the company refused to accept, and declined to pay the percentage on the revenue for May until the city agreed to pay the full amount of the account rendered.

The city has also issued a writ against the company claiming \$14,000 for cleaning snow off the track allowance last winter.

### The Jitney Situation in Canada.

The attention of the Montreal City Council has been called by Alderman Rubenstein to the franchise granted to the Canadian Autobus Co. At a recent meeting he asked if the council would call upon the company to fulfil the terms of the franchise, which was adopted in June, 1912. The litigation, initiated by a ratepayer, as to whether the council had the right to grant such a franchise, has been decided in the city's favor recently. The matter is still under the council's consideration. On Nov. 3, the Supreme Court of Canada granted leave to appeal against the decision referred to on condition that Robertson, the ratepayer taking the action, pay the costs incurred to date into court, within 10 days, and make his application to the Privy Council within 40 days thereafter.

The Toronto Police Commissioners have decided that after Jan. 1 every jitney must carry a plate, to be supplied by the commissioners, setting forth the fact that it is a "jitney," and the number of passengers it is licensed to carry.

It was reported, Nov. 1, that there were 450 jitney licenses in existence in Vancouver, B.C., and that bonds had been put up by the owners in respect of 350 of them. Ten drivers have been prosecuted recently for running their cars without having deposited the bonds required by the regulations. The Vancouver Juvenile Protective Association has passed a resolution asking for a regulation preventing women and girls being taken as passengers in jitneys at night.

A jitney bylaw is still under discussion at New Westminster, B.C., one of the points of difference being as to the amount of the bond to be put up by the owners of the cars. The question is whether the amount of the bond is to be \$1,500 for each car, or \$1,500 for each passenger. In this connection it is to be noted that in Los Angeles, Calif., the bond is for \$5,000 a car.

A number of jitney drivers in Victoria, B.C., who were fined, Nov. 3, for breaches of the bylaw regarding the operation of these cars, stated that they could not pay the fines imposed, and elected to go to jail. One of the drivers gave as a reason for the excessive speed of his car that he had to make a living.

**Toronto Eastern Ry.**—There has been deposited with the Secretary of State at Ottawa copy of a trust deed made between the company and the Guardian Trust Co., securing an issue of 30 year 5% debenture stock or bonds on certain of the company's lines.



## Hydro Electric Power Commission of Ontario's Radial Railway Projects.

Delegates representing a large number of the municipalities interested in the proposals made by the commission for building a number of radial electric railways in Ontario, met in Toronto, Oct. 27. The plans submitted covered a line from Toronto to Sarnia, via Port Credit, Milton, Guelph, Berlin, New Hamburg, Stratford, St. Marys, London, Strathroy, and Arcona. Sir Adam Beck, Chairman of the Commission, stated that the line was estimated to cost between \$10,000,000 and \$11,000,000, including the Dominion subsidy of \$6,400 a mile, which it was hoped would be voted. The Dominion Government was sympathetic, but the final decision rested with the Provincial Government. Once they were favorable the Dominion Government would do its duty. He urged that pressure be brought to bear upon the Government to the end that a declaration of policy might be obtained. Privately owned railways had been bonused, and the people's enterprises should be as generously treated. The actual cash would not be needed for two or three years, but it was necessary that the people know where the Government stands on this matter. The entrance into Toronto would be along the waterfront, and would carry passengers right to the market centre. The plan submitted was considered to be the most feasible one, but it might be changed to suit the circumstances, but it must be remembered that the line was projected, not for the benefit of any single municipality, but for the whole province. The acquirement of the Toronto Suburban Ry. from Toronto to Guelph had been suggested, but nothing had been done in regard to it. The delegates endorsed the proposal, and arranged that bylaws would be submitted at the coming municipal elections in the 15 municipalities interested between Toronto and Guelph.

Delegates from the municipalities through which the projected line will pass between Guelph and London, met at Guelph, Oct. 28, and those representing the municipalities between London and Sarnia, met at London, Nov. 2. They endorsed the general plans, and arranged for the submission of the bylaws necessary at the January election.

Chief Engineer Gaby laid the proposition before the City of Guelph, so far as it affects that city, Nov. 12, and before the city authorities of Berlin and surrounding municipalities, Nov. 13. It was stated that the City of Guelph would be asked to issue bonds for \$700,000; Guelph Township, \$325,000; City of Berlin, \$700,000; Town of Waterloo, \$125,000, and Waterloo Township, \$508,000.

At a meeting in Stratford, Nov. 11, a resolution approving of the plans suggested for that district was passed, and bylaws will be submitted at the January election. The City of London decided, Nov. 16, that its ratepayers should vote on a bylaw to raise \$1,000,000 for radial railway construction with the Toronto-Sarnia line. Meetings are being held in the other municipalities interested so that the ratepayers may have full information as to the proposition before the day of voting.

The routes selected by the H. E. P. Commission's engineers are as follows:

**Humber River-Port Credit section.**—From the west limits of the City of Toronto at the Humber River the line runs westerly parallel to and south of the G.T.R. main line. It crosses the Credit River about midway between the Lake Shore Road and the G.T.R.

**Port Credit-Milton section.**—Leaving Port Credit, the line crosses the G.T.R. about a

mile west. It then runs to 400 yds. north of Sheridan post office and thence direct to Milton.

**Milton-Guelph section.**—Crossing the C. P.R. west of that company's station at Milton the location runs to Lot 6, Con. 1, Esquering Tsp., thence to Lot 7, Con. 5, Nassagaweya Tsp., thence to Lot 25, Con. 4, Nassagaweya Tsp., thence to Lot 30, Con. 1, Nassagaweya Tsp., thence to Lot 3, Con. 9, Puslinch Tsp., thence parallel to Toronto Suburban Ry. and Eramosa River to Guelph.

**Guelph-Berlin section.**—From Guelph it is proposed to run north westerly through Bloomingdale and New Germany to Berlin.

**Berlin-Stratford section.**—From Berlin the line runs westerly to Baden and thence parallel to the G.T.R. through Baden and New Hamburg to Stratford.

**Stratford-St. Mary's section.**—In Stratford the line runs westerly over private property and over the city streets to the western limits of the city. Thence it runs parallel to the G.T.R. to St. Mary's, through Downie and Blanchard Townships. It then runs southerly and westerly through the town over private property and streets, crossing the C.P.R. at grade and thence over the Thames River out of the town.

**St. Mary's-London section.**—From the western limits of the Town of St. Mary's the line runs in a south westerly direction through Blanchard and Biddulph Townships parallel to the G.T.R. to Granton. From Granton it runs through Biddulph Tsp. southerly to the northern boundary of London Tsp. From thence it runs south easterly adjacent to road between Lots 8 and 9 from Concessions 16 to 10 inclusive, London Tsp. From this point the line runs southerly through Concessions 9 to 4 inclusive, from lots 9 to 16 inclusive of London Tsp. From this point it follows (back a short distance) from the Thames River through Concessions 3 to 1 inclusive of London Tsp. to a point between the Sarnia Road and the Thames River, a short distance west of the Wharnclyffe Road just outside the north westerly boundary line of the City of London. From this point the line runs south easterly over private property and city streets and over the Thames River in the City of London to Bathurst St., some 260 ft. west of Ridout St., thence easterly along Bathurst St. to the London and Port Stanley Ry., which at present terminates on Bathurst St. just east of Richmond St.

The municipalities which will vote on the projects are the townships of London, Trafalgar, Waterloo, Blanchard, Wilmet, Downie, South Easthorpe, Toronto, Nassagaweya, Guelph, Etobicoke, North Easthope, Biddulph, Esquering, Puslinch, Eramosa, Nelson, Ellice, East Zorra, and West Nissouri, the cities of London, Berlin, Guelph, Stratford, the towns of Waterloo, St. Mary's, New Hamburg and Milton, and the villages of Mimico, New Toronto and Port Credit.

The estimated cost of the various projected lines is \$11,000,000.

**Toronto and York Radial Ry.**—The Ontario Railway and Municipal Board, on Nov. 1, ordered the Toronto and York Radial, on the application of the Toronto-Hamilton Highway Commission, to move its tracks from the centre to the south side of the road, where they pass from the side to the centre, for 1,100 ft., through the village. A further distance of 1,600 ft. is to be dealt with later. (July, pg. 277.)

## Cost of Toronto Civic Car Line Construction.

In answer to an alderman's enquiry, the Toronto Commissioner of Works stated recently that the city had spent \$1,450,883 in the construction of civic car lines, which includes material purchased for the new Lansdowne Ave. line, not yet constructed. This includes an actual expenditure of \$1,350,149, while there are still liabilities outstanding of \$100,734.

Single track line has cost \$60,000 a mile, and double track line \$128,000, for paved construction, including devil strip in the latter case, with 15 ins. of concrete under rail and 18 ins. at intersections, together with overhead structure. The cost per mile of ballasted single track is estimated at \$30,744, and ballasted double track \$54,339, including overhead in each case.

## Electric Railway Finance, Meetings, Etc.

**British Columbia Electric Ry., and allied companies:**

	Sept. 1915	Sept. 1914	July 1 to Sept. 30, 1915	July 1 to Sept. 30, 1914
Gross earnings	\$517,022	\$550,516	\$1,534,871	\$2,015,351
Expenses	477,026	509,626	1,448,479	1,548,804
Net Earnings	39,916	140,890	86,392	466,547

The percentage due to the City of Vancouver for October was \$3,292.85, against \$6,710.98 for Oct., 1914. The number of passengers carried in the periods named were 2,250,450 and 2,856,725 respectively.

**Brantford Municipal Ry.**—A press dispatch says that the Paris-Brantford section had net earnings of \$1,654 for the first six months of the fiscal year and that the Paris-Galt section had a deficit of \$2,674 for the same period.

**Cape Breton Electric Co.**—

	Sept. 1915	Sept. 1914	Sept. 30, 1915	Sept. 30, 1914
Gross earnings	\$3,639.17	\$27,775.00	\$98,184.68	\$91,381.66
Expenses	18,183.93	17,816.77	54,009.61	54,967.03
Net earnings	15,455.24	9,958.23	44,175.07	37,014.63

**Detroit United Ry.**—The ratepayers of Detroit, Mich., on Nov. 2, by a vote of 38,585 to 32,628, decided not to approve of the proposed purchase of the city lines. The plan was formulated by the city's Street Railway Commission, and had been under consideration for over a year. Municipal ownership of public utilities has been urged in Detroit for about 20 years, and has been endorsed by the ratepayers, in connection with the street railway. The recent vote was taken on a specific proposition for acquiring the company's lines in the city, by assuming the entire bonded debt, about \$24,000,000.

**Hamilton St. Ry.**—Earnings for three months ended Sept. 30, \$147,799.91, against \$151,476.35 for the same period 1914. The percentage paid to the city was \$11,824 and \$12,118.11 for the same two periods respectively.

**London St. Ry.**

	Oct. 1915	Oct. 1914	Jan. 1 to Oct. 31, 1915	Jan. 1 to Oct. 31, 1914
Gross earnings	\$4,234.74	\$30,722.19	\$80,333.36	\$81,507.96
Expenses	23,262.19	22,718.63	228,670.37	222,326.56
Net earnings	10,972.55	8,003.56	101,663.09	91,180.87

**Montreal Tramways Co.**—The Montreal Board of Control, on Nov. 5, decided to notify the company that legal proceedings will be taken if it does not comply with the provisions of the franchise bylaw to report receipts for the financial year ended Sept. 1, upon which the city's percentage is based. These returns were not made for 1913-14 until Jan., 1915, and the company still retains \$95,000 of the amount then due. The city could not recover interest on overdue amounts, and claims that it was compelled to borrow money to meet current charges because of the failure of the company to pay up.



### Toronto Ry., Toronto and York Radial and allied companies

	Jan. 1 to Sept. 30, 1914	Jan. 1 to Sept. 30, 1915	Jan. 1 to Sept. 30, 1914	Jan. 1 to Sept. 30, 1915
Operating expenses	\$8,779,921	\$8,779,921	\$8,779,921	\$8,779,921
Depreciation	1,000,000	1,000,000	1,000,000	1,000,000
Interest	1,000,000	1,000,000	1,000,000	1,000,000
Net earnings	449,226	449,226	449,226	449,226

**Toronto Ry.**—The receipts from Jan. 1, 1915, compared with those for 1914, are as follows:

	1915	City percentage	1914	City percentage
Operating expenses	\$8,779,921	70.486	\$8,779,921	70.486
Depreciation	1,000,000	8.744	1,000,000	8.744
Interest	1,000,000	8.744	1,000,000	8.744
Net earnings	449,226	3.930	449,226	3.930

	Jan. 1 to Sept. 30, 1914	Jan. 1 to Sept. 30, 1915
Operating expenses	\$8,779,921	\$8,779,921
Depreciation	1,000,000	1,000,000
Interest	1,000,000	1,000,000
Net earnings	449,226	449,226

**Winnipeg Electric Ry.**—Ten year general mortgage and refunding bonds to the extent of \$1,000,000 with interest at 5% are being offered by the Dominion Securities Corporation. They are due on July 1, 1925, but are liable to call in whole or in part at 103 with interest. These form a part of a closed mortgage issue of \$1,400,000, of which \$400,000 is reserved to retire an underlying 5% issue due in 1933, which are being exchanged. The Winnipeg Electric Ry. Co. guarantees principal and interest of the issue.

### Charges Against Montreal Controllers re Electric Railway Matters.

N. Hebert resigned his position on the Board of Control for Montreal, Nov. 12. The municipal elections came in April, but the city council has the right to fill the position until that date. The ex-controller is involved in considerable litigation arising out of a meeting of the Board of Control held on June 20, when proposals made by him for a new franchise for the Montreal Tramways Co. were approved. An injunction was obtained to prevent the Board acting on the matter, one of the statements made in connection being that Hebert had asked for \$100,000 from certain interests as the price of his support. There are explanations given of Hebert's letters, and allegations and counter allegations are made, which form the basis of several actions. Justice Lafontaine, on Nov. 13, refused to grant any further extension of time in the case of St. Martin and Langlois, two ratepayers, against Hebert, which were set down for hearing Nov. 15. At the opening of the hearing on the latter date the ex-controller "confessed judgment," and Judge Greenshields entered the decision in the petitions of R. Langlois, to the effect "that the defendant is ousted and excluded" from the office of commissioner, while in the petition A. St. Martin, he is declared to have "usurped, occupied and exercised illegally the functions of commissioner." A penalty of \$400 was imposed and the ex-controller was directed to pay the costs.

A new quo warranto action was instituted against Controller McDonald, Nov. 4, in which it was alleged "that further, the respondent himself and by his agent, Renaud, on or about June 18, attempted to extort from the Montreal Tramways Co. a considerable sum of money on his promise to cease his systematic opposition to the adoption of any report on the subject of extending the franchise in favor of the company.

In the action against the Mayor for contempt by taking no notice of the mandamus of June 20, the case was argued in the Court of Appeals, Nov. 15, and judgment reserved.

## Electric Railway Projects, Construction, Betterments, Etc.

**British Columbia Electric Ry.**—The Board of Railway Commissioners has authorized the B.C.E.R. to carry its lines across the Great Northern Ry.'s proposed industrial tracks on Front St., to connect with that line on Front St.; to remove crossover between the G.N.R. and the Canadian Pacific Ry. on Front St.; to rebuild same 125 ft. easterly; and to cross the C.P.R. tracks, all in New Westminster, B.C. (Nov., pg. 441.)

We are officially advised that the company is doing two or three small jobs of laying permanent track in New Westminster.

The company's engineers reported to the Vancouver city council, Nov. 9, that the temporarily repaired Connaught Bridge is not sufficient to carry the electric railway traffic for any great length of time. The City Engineer contends that the bridge is sufficiently strong for all purposes. The City Engineer and the company's engineer were asked to go over the bridge together to check each other's work, and arrive at a decision as to its strength and capacity. (Nov., pg. 441.)

**Lacombe & Blindman Valley Electric Ry.**—The President, J. C. Gibson, Toronto, states that grading has been completed between Lacombe and Rimbey, about 39 miles, "in other words, the entire length of the line except for some slight finishing work that will be necessary," and that practically all the materials required are on the ground except the steel rails, also that part of the rolling stock has been received. No work has been done since the autumn of 1914, when it was closed down on account of financial stringency. The Province of Alberta has guaranteed the company's 5% first mortgage bonds for \$7,000 a mile on 39.1 miles, a total of \$273,700, and a prospectus offering \$250,000 of them was issued by W. L. McKinnon & Co. in November, 1914, but we have no information as to what, if any, portion of this issue was sold. (Mar., pag. 108.)

**Lake Erie and Northern Ry.**—We are officially advised that the electrical equipment of this line has been considerably delayed, owing to the non delivery of the substation and car equipment by the manufacturer. A strong effort is being made to get the equipment installed so as to have the Galt-Brantford section in operation by Dec. 31. (Sept., pg. 356.)

**London and Port Stanley Ry.**—We are officially advised that the car barn under construction in London, Ont., is approximately 150 x 100 ft. It will have three tracks extending the whole length, and a 40 ft. space along one side, which will be used for repair shops and offices. The building will be of structural steel frame with brick and concrete walls, steel sash and concrete roof. The plans were prepared in the Hydro Electric Power Commission of Ontario's office under the direction of F. A. Gaby, Chief Engineer. (Nov., pg. 441.)

**Moncton Tramways, Electricity and Gas Co.**—A deputation from the Sunny Brae Town Council waited on E. B. Reeser, General Manager, at Moncton, N.B., recently asking for an extension of the company's lines via Church St., to the new town of Sunny Brae. Mr. Reeser expressed the company's desire to make the extension, and promised to take the matter up with the council in January. (Oct., pg. 404.)

The extension of the company's line from Longue Pointe to Pointe Aux Trembles was opened for traffic Nov. 15.

**Montreal and Southern Counties Ry.**—We are officially advised that the erection of the car barns at Granby, Que., on the ex-

tension from St. Cesaire, will be gone on with next spring. The sub power station on the extension has been completed. W. B. Powell, Montreal, is General Manager, and G. J. Meyer, St. Lambert, Que., is Electrical Engineer.

The Board of Railway Commissioners, in a recent judgment, finds that the bylaws and agreements with the municipality of St. Lambert cannot be read as obliging the company to construct permanent foundations for its tracks or to do more than complete its lines under the direction of the municipality, using T rails and laying them at the level of the existing roadbed, and laying gravel between the rails and for 2 ft. on either side. The public convenience and safety, however, demand that the highway and the railway levels be the same, and the Commissioners, under their general powers, direct that the railway tracks be made to conform to the new street level. In the contract, however, the cost is to be borne by the municipality. If the municipality desires the railway right of way and the highway to be of similar surface and foundation, it may do the work, the railway contributing such an amount as is represented by the cost of the foundation and surfacing authorized by the contract.

The Dominion Parliament is being asked to extend the time for the construction of the various lines authorized to be built. (Nov., pg. 441.)

**Montreal Tramways Co.**—The Board of Control has asked the company to establish the following new routes: A continuous circuit running from Villaray St. south on St. Denis St. and east on St. Catherine St., to Papineau St. or Delorimier Ave.; and to link Rosemount St. with Place d'Armes by a line on the small section of Frontenac St. now without car tracks. (Nov., pg. 441.)

**Niagara River and Eastern Ry.**—The Public Service Commission for the Second District of the State of New York has, according to a press report, under consideration an application by the N.R. and E. Ry. for permission to build and operate a double track line for passenger and freight service between Lockport and Niagara Falls. The N.R. and E. Ry. proposes to connect with the International Ry. and Buffalo, Lockport and Rochester Ry. at Lockport, and with trunk lines of steam railways in Canada by a new bridge across the river at Lewiston. It is also proposed to handle freight on the B.L. and R. Ry. and have connections with the Erie Rd. and Pennsylvania Rd. at Rochester. Charles Hickey, Lockport, is President.

**Peterborough Radial Ry.**—We are officially advised that the reconstruction and other work on the lines in Peterborough, Ont., comprise the laying of 2,000 ft. of new track on Charlotte St.; and the reconstruction of 1,400 ft. on Park St., and of 2,200 ft. on George St. W. G. Ferguson is Local Manager. (Nov., pg. 441.)

**Pictou County Electric Co.**—We are officially advised that the proposed extension to Parkdale, N.S., will not be gone on with until next spring. L. T. Flaherty, Stellarton, N.S., is Manager. (June, pg. 329.)

**Quebec Ry., Light and Power Co.**—H. G. Matthews, General Manager, is reported to have stated, Nov. 12, that the addition to the power house at Montmorency Falls is expected to be completed about Dec. 15. It will add 15,000 h.p. to the power at present at the company's disposal. (Oct., pg. 404.)

**The Sudbury-Copper Cliff Suburban Electric Ry.** is now operating an hourly service from just east of the C.P.R. crossing in Sudbury to Copper Cliff. As soon as the diamond crossing over the C.P.R. is put in,



which is expected to be early in December, a 15 minute service will be given on the whole length of the line both in Sudbury and out to Copper Cliff. A motor car, which has been borrowed from the Toronto & York Radial Ry., is being used at present, but two motor cars have been bought in New York.

**Toronto, Barrie and Orillia Ry.**—Application is being made to the Barrie, Ont., Town Council for an extension of a year for the laying within the town of the tracks authorized by the franchise. (May, pg. 190.)

### Regina Municipal Railway Operations.

The following figures are for September, compared with those for Sept. 1914,—

	1915.	1914.
Revenue .....	\$13,545.63	\$15,420.43
Operating expenses .....	\$13,257.97	\$15,453.47
Operating surplus .....	\$287.66	.....
Operating deficit .....	.....	\$33.04
Capital charges .....	\$9,137.57	\$7,476.52
Total deficit .....	\$8,849.91	\$7,509.56
Passengers carried .....	282,408	318,238
Expenses per car mile		
without power .....	13.37c.	14.12c.
with power .....	17.64c.	18.59c.
Power per k.w.h. ....	2.07c.	2.00c.
Power per k.w.h. per car		
mile .....	4.26c.	4.46c.
Platform wages per car		
hour .....	74.43c.	79.79c.
Expenses percentage of		
earnings, without capital		
charges .....	97.91%	
Expenses percentage of		
earnings with capital		
charges .....	165.39%	

### London and Port Stanley Railway's Traffic Interchange Arrangements.

We are officially advised that while there are some details in connection with tariffs and divisions with connecting lines not yet completed, working arrangements have been entered into as follows: At Port Stanley, car load freight is interchanged with the Bessemer & Marquette Dock & Navigation Co.'s ferry steamboat plying between Port Stanley and Conneaut, Ohio, in connection with the Bessemer & Lake Erie Ry. Passenger traffic is interchanged at Port Stanley with Cleveland & Buffalo Transit Co. There are arrangements for freight and passenger interchange at St. Thomas, Ont., with the Canadian Pacific, Grand Trunk, Pere Marquette and Wabash railways and with the Michigan Central Rd. on traffic ex Port Stanley. There are freight and passenger interchange arrangements at London with the Grand Trunk, also inter-switching arrangements with all steam railways there, enabling the L.&P.S.R. to accept or deliver freight at industries located on competing lines' tracks.

**Provincial War Tax in Ottawa.**—Judge McTavish gave judgment at Ottawa, Nov. 1, on an appeal by the Ottawa Electric Ry. against being assessed for the Provincial war tax, amounting to about \$800. The judge held that the agreement exempting the company from taxation referred only to such taxes as the municipal authorities control; the war tax is a provincial tax, and not a municipal one, and as such is not covered by the exemption in the agreement. The company did not object to pay the tax on its real property assessment, nor did it object to the amount of the assessment otherwise, but appealed simply on the point of law as to whether it was not exempt under the agreement.

**Thirty Million Passengers** were carried on ferry boats in San Francisco Bay without injury through accident during the year ending June 30, 1915. In the last 25 years, it is stated, only two deaths have resulted from ferry mishaps.

## Mainly About Electric Railway People.

**H. N. Kittson**, one of the members of the Ontario Railway and Municipal Board, has been elected a Fellow of the Royal Colonial Institute.

**F. Morton Morse**, Secretary-Treasurer, Winnipeg Electric Ry., and Mrs. Morse, have gone to England to be near their three sons who are on active service.

**Patrick Dubee**, Secretary-Treasurer, Montreal Tramways Co., has been appointed a member of the American Electric Railway Association's taxation committee to represent Quebec Province.

**W. G. Ross**, formerly Managing Director, Montreal St. Ry., now Chairman, Montreal Harbor Commission, applied for \$50,000 of the Dominion Government war loan issued in November.

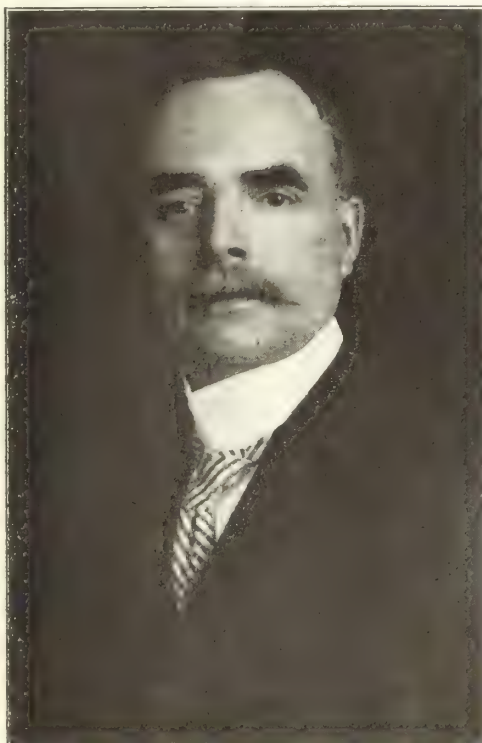
**Lt.-Col. E. W. Rathbun**, of Deseronto, Ont., President, Oshawa Ry., who is now on over-

will probably go to the front in the near future.

**Capt. Guy Boyer**, who has been appointed to the command of B Company, 22nd Battalion, Canadian Overseas Expeditionary Forces, vice Major A. V. Roy, killed in action, was at one time Superintendent of Construction, Montreal St. Ry., and on leaving that company's service went into business in Montreal as a general contractor.

**S. Walter Mower**, General Manager, Otsego and Herkimer Rd., Colliers Light, Heat & Power Co., and Hartwick Power Co., of Cooperstown, N.Y., has resigned due to change in ownership of the properties. Prior to his connection with the Otsego & Herkimer Ry. in October, 1912, he was General Manager of the London & Lake Erie Ry. & Transportation Co. at London, Ont. He was born at Grand Haven, Mich., Aug. 13, 1876. In 1890 he moved to Detroit, and in 1900 he became Assistant to General Manager, Detroit United Ry. In 1905 he became Assistant Superintendent, Port Huron Division, Michigan United Ry., and in June, 1906, he was appointed General Manager of the Southwestern Traction Company, which afterwards became the London & Lake Erie Ry. & Transportation Co. From 1903 to 1908 he was Secretary-Treasurer of the American Electric Railway Engineering Association.

**George Lorne Guy**, whose appointment as Engineer, Manitoba Public Utilities Commission, Winnipeg, was announced in our last issue, was born at Portage du Fort, Que., Apr. 14, 1883, and educated at Camden East, Newburgh, and Queen's University, Kingston, Ont. From 1899 to 1902 he was armature, transformer, meter and test operator, Canadian General Electric Co., Peterborough, Ont.; 1902 to 1907, chief electrician construction and operation, Graves, Bigwood and Co., at Byng Inlet, Ont., and during the winter months of these years was attending Queen's University. From 1907 to 1908 he was engaged in contract construction work at Camden East, Yarker and Newburgh, Ont.; 1908 to 1910, Engineer of Rolling Stock, Winnipeg Electric Ry., Winnipeg; 1910 to 1912, Engineer, Winnipeg City Electrical Department; 1912 to 1914, Sales Manager, Electrical Department, Canadian H. W. Johns-Manville Co., Winnipeg; and from Mar. 1, 1914 he has been in private practice as a consulting electrical engineer, which he will continue, in addition to his duties under the Manitoba Public Utilities Commission.



H. W. Cooper,  
Manager, Oshawa Railway and Thousand  
Islands Railway.

seas service, is in command of the 6th Reserve Brigade of Field Artillery, which forms the Canadian artillery depot of the training division of the new Canadian Army Corps.

**Duncan McDonald**, formerly General Manager, Montreal Tramways Co., will have to go up for re-election next spring if he wishes to continue as one of the Montreal city controllers. In a draw to decide which two of the controllers must retire from office, Controllers McDonald and Hebert lost.

**Frank Harris**, for the past four and a half years Publicity Agent, British Columbia Electric Ry., at Vancouver, has resigned. He went to Vancouver from New York in 1904, and served for several years on the Vancouver daily press before entering the B.C.E.R. Co.'s service. After having a rest he will again take up work.

**Major C. W. W. McLean**, who has been decorated with the Distinguished Service Order for skill in commanding his battery during a recent engagement, is son of Col. H. H. McLean, K.C., M.P., President, St. John Ry., who has been in command of the 7th Infantry Brigade at Valcartier, and who

**Toronto Ry. and Overcrowding.**—The appeal by the Toronto Ry. against a conviction for maintaining a public nuisance by overcrowding its cars, was dismissed by the First Division Court of the Appellate Division, at Toronto, Nov. 10, and the conviction confirmed. R. J. Fleming, General Manager, Toronto Ry., is reported to have stated that the conviction could have no real effect on the matter, as the question of the type of cars to be adopted was still before the Ontario Railway and Municipal Board, and until this had been decided, the company could do nothing to remedy overcrowding so far as it existed.

**Railway Lands Patented.**—Letters patent were issued during October in respect of Dominion railway lands in Manitoba, Saskatchewan, Alberta and British Columbia, as follows:

	Acres.
Calgary and Edmonton Ry. ....	1,606.00
Canadian Northern Ry. ....	187.79
Edmonton, Dawson and British Columbia Ry. ....	10.34
Grand Trunk Pacific Branch Lines Co. ....	11.26
Qu'Appelle, Long Lake and Saskatchewan Rd. and Steamboat Co. ....	2,398.00
Total .....	4,513.39



### Edmonton Municipal Railway Results.

Engineering and Commerce Reports, the official organ of the Engineering and Commerce Efficiency Society of America, Inc., had in a recent issue an article, "Municipal System of Edmonton," by S. C. Reab, of Calgary, Alta., which deals with the street railway department as follows:—"On Nov. 8, 1908, Edmonton instituted the street railway trolley system, the largest venture in the municipal ownership programme, and at present the gravest problem. It seems impossible for this utility to be operated without incurring a big deficit each year. Edmonton has the difficulty to contend with of a large area and a relatively small population. The population is about 40,000, scattered over an area of some 27,000 acres. The establishment of a jitney service has affected somewhat the street railway earnings, but as this service was not established until the spring of 1915 its competition need not be taken into account in this review.

The trackage of the Edmonton street railway system consists of 43 miles of double track (figured on a single-track basis) and 11 miles of single track. The utility had 258 employees and paid \$284,159 in salaries during 1914. Its debenture liability as of Dec. 31, 1914, was \$3,004,429. The cost of the system to that date totaled \$3,063,784, the buildings, track, and equipment having cost \$2,887,866, discount on debentures \$115,876, Strathcona franchise \$10,000, and land \$50,042. The sinking fund amounted to \$174,691. The year's expenditures were: Operating, \$535,430; maintenance, \$80,828; other, \$251,958; a total of \$867,670; against which were receipts aggregating \$642,109, leaving a deficit for the year of \$225,561.

"In 1914 the Edmonton street railway had one fatal accident and 10 suits for damages, all of which were successful, the department paying \$11,182 in damages."

**London & Port Stanley Ry. Operating Results.**—The London Railway Commission, which is operating the newly electrified line, claims that it is already a success. It is stated that the gross revenue for three months to Sept. 30 was \$71,000. At first several steam locomotives had to be hired for the freight traffic, and in August the operating expenses were about \$18,000, but in September, with complete electric operation, they were reduced to about \$10,000. The Commission has paid the city of London \$13,885.54 for the three months, which includes interest on the city's money used during that period, together with sinking fund and rental at the rate of \$20,000 a year. It is stated that these results were obtained in spite of the withdrawal of the Grand Trunk Ry.'s coal traffic, and without the Michigan Central trains which were formerly run over the line between St. Thomas and London.

**A Motor-Bus Feeder Service** for the municipal railway line of Portland, Ore., has been inaugurated. The city council has approved a contract for the operation of motor buses between 13th Ave. West and Nickerson St. and Ballard Ave. and Market St. The contractor receives 3c. for each adult carried and 1.5c. for each school pupil. The city will receive 2c. and 1c. respectively. The contractor is required to furnish an indemnity bond and has the right to extend his route to 20th Ave. and West 65th St.

**The City of San Francisco** has completely constructed 20 miles of electric railway. The city has acquired, constructed and equipped 43.6 miles of single track and has under consideration the immediate construction of an additional 5 miles.

### Electric Railway Notes.

The Toronto Ry. gave \$1,000 to the Toronto Citizens Recruiting League on its tag day, Nov. 9.

The Calgary Municipal Railway is, according to a press report, starting to run one-man cars in the downtown section.

Arrangements are being made for the organization of a unit of the 6th Regiment in Vancouver, to be composed entirely of British Columbia Electric Ry. employees.

About 400 out of the nearly 7,000 members of the Street Railway Men's Union in Canada have enlisted for overseas military service. Their dues are being carried by the order during their period of service.

The Toronto Street Railway Men's Union had a membership of 2,000 when war started and 306 of its men have enlisted. All members who enlist are kept in good standing and the union looks after the wives and children.

The Montreal city council passed a resolution, Nov. 11, calling upon the Montreal Tramways Co. to establish a new five minute car service connecting the north and east ends of the city, via St. Denis and St. Catherine St. East.

The British Columbia Electric Ry. is negotiating with Point Grey and other suburban municipalities round Vancouver for a reduction of the number of cars to be run, and for a general rearrangement of schedules, in order to meet decreased traffic.

C. W. Keats, of Toronto, has been awarded \$3,800 as compensation for injuries received by his three year old son, in the International Ry. accident at Queenston, Ont., recently. The company had previously settled a claim, by paying \$750, on account of the death of a daughter of the same party.

The Toronto & York Radial Ry., through its Bulletin, which is distributed in its cars, asked its passengers recently to say whether they were in favor of smoking in the rear vestibules of the radial cars or not. Coupons were supplied for answering on and the result was a vote of two to one in favor of allowing smoking. It was therefore decided to continue to permit smoking in rear vestibules of cars not provided with a smoking compartment.

**Saskatoon Parcels Delivery.**—The Saskatoon, Sask., City Council is considering a proposal for a daily delivery of goods by street car between Saskatoon and Sutherland. It is proposed for a car to leave Saskatoon at 4 p.m.; parcels to be charged at from 5c. to 15c., according to weight; parcels to be delivered on to the car at Second Ave., Saskatoon, any time after 3 p.m., and to be called for at the Sutherland end. The maximum limit of weight to be 50 lbs., and the maximum size to be 3 x 2 x 2 ft., or 6 ft. long by 2 ft. wide. The person in charge of the delivery depot at Sutherland to be paid 30% of the total receipts. All parcels to be conveyed at sender's risk.

**The Toronto Motor Bus Co.** applied to the Toronto City Council, Nov. 1, for permission to operate a system of motor busses on 13 of the principal city streets, covering the greater portion of the city, for five years from Jan. 1, 1916. The vehicles the company proposed to use would be built with a centre aisle and have accommodation for 14 persons each. The company offered to commence business with 25 vehicles within 60 days, and pay \$5,000 a year for the privilege, and in addition 5% of the net earnings. Bain, Bicknell, Macdonell and Gordon, a local legal firm, represented the company.

### Ontario Railway and Municipal Board's Jurisdiction Over Hamilton, Grimsby and Beamsville Electric Railway Confirmed.

The Ontario Railway and Municipal Board on May 10 ordered the Hamilton, Grimsby and Beamsville Electric Ry. to file within 30 days complete plans and specifications for sanitary conveniences on its passenger cars and in its passenger station at Grimsby. At the hearing the company contended that the Board had no jurisdiction over it, but that it was under Dominion jurisdiction. (See Canadian Railway and Marine World, June, pg. 226), and it appealed against the order.

On Nov. 9 the Appellate Division of the Ontario High Court of Judicature, gave a unanimous judgment dismissing the appeal with costs, so that the Board's order is confirmed.

**Lack of Passenger Shelter at Sunnyside, Toronto.**—In commenting on the lack of shelter for passengers while waiting for Toronto and York Radial Ry. cars at Sunnyside, Toronto, D. M. McIntyre, Chairman of the Ontario Railway and Municipal Board, is reported to have said recently: "We ordered a shelter to be built two years ago. The city has taken over the line, but is not operating it, and I understand has not even paid for it. We cannot order the railway company on an expiring title to build a station. Although the city has practically bought the line it will not assume the title. Last year the company offered voluntarily to place a lighted and heated car there for the convenience of the people. This winter there is nothing, and people wait as long as twenty minutes in the cold. It is a shame. I have endeavored to have the city provide a shelter, and have had the matter up over and over again. But the Board of Control refused recently to recommend the necessary expenditure."

**Destruction of Suburban Shelters.**—The British Columbia Electric Ry. has about 40 shelters and platforms on its line along the Fraser Valley to Chilliwack. It is reported that practically all of these are in a "deplorable state," owing to the breakage of windows, the smashing of doors, and the destruction of platforms. This is a condition of affairs that prevails on nearly every suburban line in Canada, and the companies are practically powerless to prevent it. These shelters are erected for the convenience and comfort of travellers, and ought to be protected by the public authorities from the ravages of hoodlums and others.

**Vandalism in British Columbia.**—Vancouver newspapers report that considerable damage has been done to Canadian Northern Pacific Ry. station and other buildings in the Fraser River Valley. Windows have been broken, floors torn up, electric light fixtures removed, and other damage done. The British Columbia Electric Ry. stations in the same district have also suffered similar damage.

**New Siberian Railway.**—Traffic on the Altai Railway, in Central Asia, says a Petrograd despatch to the London Times, has been opened, 14 months earlier than the date contemplated. The railway, a private line 500 miles long, will open up an immense and rich region of Siberia which has been without means of communication.

**The 650 men recruited in Canada** for railway construction work in Russia, 300 of whom were got together in Vancouver, B.C., are reported to have arrived in Archangel, after an uneventful voyage from New York.



# Marine Department

## Opening of Drydock and Ship Repairing Plant at Prince Rupert.

Announcement of the opening of the Grand Trunk Pacific Ry.'s drydock and ship repairing plant at Prince Rupert, B.C., was made in Canadian Railway and Marine World for November. The selection and survey of the site was made in 1910 and the actual work of construction was commenced early in 1912. A full description of the whole plant, with details and plans, was given in Canadian Railway and Marine World for Feb., 1912, but the following general particulars may be of interest now:—

The dock is in three units, with a total lifting capacity of 20,000 tons. All the units are interchangeable, and each is complete in itself, with pumps and air compressors. The two end sections are each of 5,000 tons capacity, and the middle section of 10,000

truss secured to the pile platform in such a way that it is free to rise and fall with the tide, and when being raised or lowered with the ship. The location of these attachments is such that when it is desired to use the dock in separate sections the bow section may be detached and moved around the pier work located along side the platform and secured in the same manner as provided in the original position. To make the other two sections available as separate docks it is only necessary to detach the middle section comprising six pontoons from the pier work and advance it the length of the detached section, when the sliding clamps upon the wings will coincide with those used for the previous section when the dock was operated as a whole. This will allow ample

The boiler and blacksmith shop is 76 x 150 ft., the central part being 33 ft. wide, provided with a 15-ton travelling crane. The machine shop is of similar design.

### Canadian Northern Railway Car Ferry for British Columbia.

The Canadian Northern Pacific Ry. has given a contract to Geo. Davie & Sons, Levis, Que., to build a car ferry steamship to run between Steveston and Patricia Bay, B.C., about 40 miles. Steveston is at the mouth of the Fraser River, on the southwest corner of Lulu Island, due south of Vancouver, and at the terminus of the B.C. Electric Ry.'s Lulu Island line. It is about



Grand Trunk Pacific Railway's Drydock and Ship Repairing Plant at Prince Rupert.

tons capacity. When all three are joined together the dock will be capable of raising a vessel 600 ft. long of 20,000 tons. The dock has an overall length of 604 1-3 ft. on the keel blocks, a clear width of 100 ft. and a width overall of 130 ft. The lifting power is the aggregate of 12 pontoons of timber construction, each 130 ft. long, corresponding to the width of the dock, 44 ft. wide in a direction corresponding to the length of the dock and 15 ft. deep. These pontoons are united by steel side walls or wings 38 ft. high, 15 ft. wide at the bottom and 10 ft. wide at the top, the walls being divided so that the whole structure may be used under ordinary conditions as three separate docks, one of six pontoons with an overall length of 269 ft., and two or three pontoons each, with an overall length of 164 ft. each. The machinery for pumping the dock consists of centrifugal pumps, operated by electric motors, the capacity of the equipment being sufficient to pump the entire lifting power of the dock in two hours.

The structure as a whole is secured to the shore by clamps on the dock with a vertical

space between the centre and stern sections for the overhang without interference of vessels that may be docked in them.

The pumping machinery consists of twenty-four 12 in. centrifugal pumps, one in each end of each pontoon. They operate at approximately 275 r.p.m., being driven by a vertical shaft. All pumps on each side of each section are driven through gearing and horizontal shafting by an electric motor. Thus for the two smaller sections of three pontoons each there are four 100 h.p. motors, and for the larger section of six pontoons there are two 200 h.p. motors. These motors are alternating current, 3 phase, 25 cycle, 550 volt, with wound rotors and slip rings for variable speed control. The armature shaft is extended at both ends and operates the distribution shafts through reduction gearing at approximately 275 r.p.m.

The power house has all the boilers and power plant required for the supply of all the electric current for the drydock and shop equipment, all under one roof, covering an area of 15,392 sq. ft.

15 miles from New Westminster Bridge, from which point the C.N.R. is building a branch line to Steveston, which is about half finished. Patricia Bay is on the east coast of the Saanich Peninsula, of Vancouver Island, and another C.N.R. branch is under construction from there to Victoria, so that with the car ferry in operation the C.N.R. will have through service from Montreal to Victoria for both passenger and freight trains.

Plans for the car ferry have been prepared by A. Angstrom, who has been appointed Naval Architect for the C.N.R., and who will supervise the construction. While definite information is not yet available, it is said that the dimensions will be about as follows: length, 310 ft.; beam, 54 ft.; depth, 21 ft. The vessel will have three car tracks with a total capacity of 20 freight cars, and it is said that it will have double screws at each end and a speed of about 14 knots. It is expected to be ready for service next summer, and will be taken from Levis down the St. Lawrence River and through the Panama Canal.



# The Stranding of the s.s. Lady of Gaspé.

An inquiry was held at Quebec, Oct. 20, by Capt. L. A. Demers, Dominion Wreck Commissioner, assisted by Capt. C. Koenig and L. R. Demers, as nautical assessors, into the causes of the stranding of the Gaspé Steamship Co.'s s.s. Lady of Gaspé near the Quebec Bridge site on Oct. 13.

The master, J. B. Deslauriers, stated that the Lady of Gaspé was an iron built, schooner rigged vessel owned by the Gaspé Steamship Co., with compound engines, capable of a speed of  $9\frac{1}{2}$  miles an hour, drawing 13 ft. forward and  $15\frac{1}{2}$  ft. aft, carrying a crew of 32, including one certificated officer beside himself. She was 1,189 tons gross and 705 tons net, official no. 78554. They left Montreal at 8 p.m. Oct. 12, and about 7.30 a.m. on the following day he saw the fog coming, and the engines were put standby. They were at this time off St. Basil, and proceeded at half speed and slow, the tide then being flood, one hour from high water. When the north end of the Quebec Bridge was sighted about a point on the port quarter the engines were placed at half speed. Shortly after, upon land being perceived, the order of port was twice given, but the ship touched. The engines were stopped, but no attempt was made to go astern. As some time afterwards the engineer reported the ship was making water fast the boats were lowered in readiness for transferring the passengers, but they were not used as a tug was sent by the owners for that purpose. He further stated that the second officer acted as pilot and gave instructions with regard to the navigation of the ship from Montreal to Quebec at least.

The second officer, who holds no certificate, corroborated the master's evidence in so far as weather conditions were concerned, but added that he gave instructions with regard to steering and courses. He did not look at the compass, but steered by objects such as lights, etc. He did not know what error existed in the compass, and stated that the course he was steering when passing the bridge was E. by N. He did not know whether the captain had detailed a man on the lookout, nor whether there was one, but the fog signals were sounded. He averred that the ship lies as she grounded, and he finds that she is now heading E. N.E., but cannot account for this. He intended to anchor and steered in close in order to make the wharves.

The wheelsman said that he relieved the wheel some five or ten minutes prior to the grounding, finding it starboarded, and he received the order to port twice and the ship grounded. He did not know how she was heading at the time, but thinks she altered a point under the port helm.

The lookout man, who was 16 years of age, stated that he had been four months on the Lady of Gaspé, as sailor, wheelsman and lookout; that he was at the wheel from 6 o'clock until ordered to notify one man from the main deck to relieve him. Meantime the ship was being steered by the second mate. He then went on the lookout, but did not see any sight of land through the fog until after the grounding.

The engineer said that after standby was ordered some ten minutes he came on deck, but did not notice the weather conditions. Various orders were given and executed. At the time of the grounding the engines were going about half speed, which would be about seven knots.

The court's finding is as follows:—The evidence again brings to the court's attention the peculiarly unseamanlike navigation system which appears to prevail on certain

types of vessels. We notice that logs are kept, but very little importance seems to be attached to them, as there is not sufficient information contained in them to verify the statements made before the court. Any copy book at hand seems to have answered the purpose as a log book, and to satisfy the owners, who in this case, appear to look on such important documents with a marked degree of indifference. We cannot help expressing our astonishment at the fact that the master, through the system adopted on board this vessel, is subservient to the instructions and directions of a so called pilot,—second officer,—without even a cer-



Pier Derrick at Grand Trunk Pacific Railway's Ship Repairing Plant, Prince Rupert, B.C., Capacity, 50 Tons.

tificate of competency of any kind. The court heard the master say that he spoke to the pilot, or second mate, about anchoring before they reached the Quebec Bridge, but evidently the so called pilot deferred the anchoring to a later period with the result that he came to grief, although he, the pilot, stated that he sailed or steered a course to get near the wharves in order to anchor; but apparently only when he himself thought proper. The said pilot proved to be a man who was not even versed in the elementary navigation duties involved in handling a vessel, and showed lack of knowledge of distances, and in the opinion of this court was not a person to be entrusted with any duties respecting navigation. The master appeared to be an intelligent man, anxious to do well; but unfortunately influenced by the conditions indirectly imposed upon him by the management. Since he was satisfied to submit to a system which he must have known to be of

a pernicious nature, he must accept its responsibilities.

The ship having a number of passengers on board it was the duty of the captain to assert his authority, and order the anchoring of his vessel in the vicinity of St. Basil, when he saw the dense fog approaching him. Having failed to do so, and being aware of the eddies forming around the piers of the Quebec Bridge, which had a tendency to cause bad steering, he should have taken a broader course passing more in the centre of the channel. It is shown that the vessel must have passed 150 ft. at the utmost from the north pier, whilst at that place there is a width of 1,800 ft. between the two piers. The court cannot come to any other conclusion than that the grounding of this vessel was due to lack of prudence and bad navigation on the part of the master, whom it holds solely to blame, and therefore suspends his master's certificate, 7253, for one year from Oct. 20; but recommends that a mate's certificate for passenger steamers and fore and aft rigged sailing vessels in the coasting trade be granted to him from Apr. 1, 1916, until expiration of his suspension. The court has dealt leniently with the master owing to the peculiar conditions existing on board his vessel regarding piloting of same. As the second mate had no certificate we cannot deal with him.

The court wishes to remark that in its point of view, the employment of an officer without a certificate, or even with one, with a verbal understanding that he is to act as pilot and advise the captain, deserves condemnation, as the influence of such arrangements is contrary to all common sense and is fraught with danger owing to its effect on the mind of the master, who, when he has secured an appointment must, even though conscious of the illogical system, submit to it in order to retain his position. We have every sympathy for a master who finds himself tied down to such conditions; but we, nevertheless, in accordance with our duties, hold him alone responsible for any mishaps. If a master takes command and is unacquainted with the river he should insist that a properly qualified pilot be engaged, irrespective of cost to the owners, and we are of opinion that the sooner the owners of small craft plying the river in charge of masters unfamiliar with the conditions existing, are made to realize that the economy practiced in this manner is not conducive to any good, the better it will be for the reputation of our St. Lawrence route. The court is also of the opinion that whenever it has to deal with such a peculiar condition, that the owners should be called upon to defray the costs of investigation, as in this case the owners are indirectly responsible for this mishap.

**Loss of the s.s. Donnacona.**—Reports were received at the end of October that Canada Steamship Lines' s.s. Donnacona had foundered in mid-ocean, the crew having been saved. The Donnacona operated on the Great Lakes for several years and was one of the company's vessels which entered the Atlantic trade at the commencement of this year. She was built at Newcastle, Eng., in 1900 and was screw driven by triple expansion engines. Her dimensions were, length 245 ft., breadth 42 ft. 6 ins., depth 20 ft. 8 ins.; tonnage, 1,906 gross, 1,222 register. She was originally owned by R. O. & A. B. Mackay, Hamilton, Ont., and subsequently by Inland Lines, Ltd., Richelieu and Ontario Navigation Co., and Canada Steamship Lines, Ltd.



## The Canadian Pacific Railway and the Allan Line.

In commenting on the separation of the C.P.R. steamships from the railway proper, and the absorption of the Allan Line, the Marine Engineer and Naval Architect says: "Under any circumstances other than those now prevailing, it would have been a matter of universal comment, even in the daily press, when the announcement was made that the Allan Line was to be, in fact, absorbed by its big ally, the Canadian Pacific Railway Co. As it is the news was published in a small paragraph, and there, as far as public interest goes, the matter seems to have ended. Of course, the eventual amalgamation of the two companies was long foreseen, and indeed, the arrangements between the two one time rivals had become so harmonious that what is now passing is largely a matter of form. It was probably fully intended, when the C.P.R. took measures to organize its steamship services in a separate organization. The advantages of that step were, of course, obvious as helping to smooth the financing of the working of its already great fleet. But the fact that the management had a purely shipping company under its control made things a great deal easier when a big fusion came to be undertaken. Competition was, of course, still keen when the Allan Line placed in its service the two fine and successful turbine liners, the *Virginian* and the *Victorian*, and thereby gave another proof of its adherence to the traditions set up by its founders, and adhered to throughout its long and successful career. For it was this company, if memory serves aright, which was the first—taught a lesson by the swamping and consequent foundering in the Bay of Biscay of the Australian passenger steamer *London*—to fit its liners with spar decks and to carry the tops of the engine room skylights to a higher plane. For many a year after that the Canadian steamships were notable for their clear flush decks, with an occasional deck house. Then came the era of steel, replacing the former iron fabrics, and though for Channel purposes and such like, small steamers had previously been constructed, the Allan Line put the first steel steamship on the Atlantic in its *Buenos Ayrean*, which preceded by some little time the famous *Servia* of the Cunard Co. Similarly the *Virginian* and her sister were the first two vessels fitted with turbine engines to be placed in the Atlantic trade, and it was their success which encouraged the Cunard Co. to build the *Carmania*, their experimental ship, which was soon followed by the *Lusitania*, most successful and most infa-

mously dealt with of all modern vessels, and the *Mauretania*. Then the whole passenger trade adopted the device whose value the Allan Line had proved. To these two sister ships the C.P.R.—still a keen rival—replied with the *Empress of Britain* and the *Empress of Ireland*. Much talk there was on both sides of further additions to the competition. Tenders for the construction of new vessels were even discussed, but nothing came of it and soon there was harmonious working, followed, it was said, by a certain community of financial interest, and now the C.P.R. has actually bought up the older company, though it does not yet appear that the name and entity of the famous line will be lost. . . . The gross tonnage of the Allan Line was about 155,000 tons—excluding the lost *Hesperian*—whilst that of the C.P.R. is about 239,000 tons, the united concerns thus controlling somewhere approaching 400,000 tons of first class steamships, many of which are modern passenger vessels."

**Requisition of Vessel Tonnage for War Purposes.**—An official statement was issued by the British Board of Trade, Nov. 2, denying the rumors that the Government contemplated requisitioning the entire British mercantile marine, but stating that it had been decided to take powers to deal, by requisitioning a sufficient number of vessels, with cases where an emergency of national importance exists at any time, in any particular market, owing to the absence of any tonnage, and further to regulate the employment of British shipping in the carriage of cargo between foreign ports by means of licenses.

**Harbor Work at Port Nelson.**—On the return of the s.s. *Bellaventure* from Hudson Bay, Nov. 2, it was reported that the construction of terminal facilities and other harbor work at Port Nelson was proceeding satisfactorily. Work was well under way with the building of the pier for loading grain, and three dredges were at work in the harbor. Two of these dredges were built on the spot, and the third, the *Port Nelson*, was built at Toronto, and was stated to be doing excellent work.

**Canadian Vessel Sales During the War.**—The Department of Trade and Commerce announces that the war has had a notable effect on the Canadian merchant marine in respect of the sale of vessels to other countries. Figures quoted show that vessels with a total tonnage of 17,044 and valued at \$1,150,950 have been sold, which is greater than the total for any other year. During the last completed fiscal year, Canadian tonnage increased by 45,721 tons.

## New York State Barge Canal.

The work of constructing the barge canal connecting Lake Erie and New York, utilizing and improving the Erie, Champlain and Oswego Canals, is reported to be about 90% completed, and the Barge Canal Bulletin states that although it is so nearly finished, the uncompleted portions are so located that the usefulness of the enlarged waterway cannot be realized without their completion. On the stretch between the Hudson River and Lake Ontario one uncompleted contract forms the chief obstacle to the opening of navigation along the new route, and there is a similar obstacle on the Champlain Canal.

In 1903, \$101,000,000 was appropriated by New York State for the improvement of the Erie, Champlain and Oswego Canals, and during 1915, \$3,654,000 was appropriated for the completion of contracts let prior to Jan. 1, and for which no funds were available. The Legislature also passed an act submitting to the people for decision the question of issuing further bonds of \$27,000,000 for the completion of all work contemplated, and for the settlement of claims adjudged by the courts, and in the event of the further bonds being issued, the \$3,654,000 to be refunded to the State Treasury. Voting on the referendum took place at the state elections on Nov. 2, and while definite figures are not available at the time of writing (Nov. 17), we are officially advised that the proposal to issue \$27,000,000 of bonds was carried by approximately 45,000 majority.

The actual cost of construction has considerably exceeded the original estimates, which is partly explained by delays and contract cancellations due to court decisions and by expenditures for repairing breaks and maintaining navigation in the old canal. It is pointed out that in the original estimate the chief discrepancy was regarding the amount allowed for property damages, there being no precedent at that time to indicate that the courts would award such high land damages and power development claims as they have since done.

It is estimated that, if the work be taken in hand early in January, the Champlain Canal can be completed in a year, as can also the canal between Waterford and Oswego and the branch into Cayuga and Seneca Lakes. The balance of the canal through to Buffalo would require another year to finish. Some companies, it is announced, are already organized and prepared to put vessels into service on the canal, chiefly for local traffic, immediately it is completed.

## List of Steam Vessels Registered in Canada During October, 1915.

No.	Name	Port of Registry	Where and When Built	Length	Breadth	Depth	Gross Tons	Reg. Tons	Engines, Etc.	Owner or Managing Owner	
133792	Brown Brothers	Port Stanley, Ont.,	Port Stanley, Ont.,	1915	75 2	16 5	7 7	64	44	13 sc....	A. C. Brown, St. Thomas, Ont.
138088	Leonard	Quebec, Que.	Birkenhead, Eng.,	1914	313 0	65 1	20 9	3,366	1 491	318 sc....	Minister of Railways and Canals, Ottawa, Ont.
134624	Volunda II.	Sydney, N.S.	Mira Gut, N.S.,	1915	52 7	14 1	5 3	33	23	7 sc....	Joseph L. Phillips, Mira Gut, N.S.

## List of Sailing Vessels and Barges Registered in Canada During October, 1915.

No.	Name	Port of Registry	Rig	Where and When Built	Length	Breadth	Depth	Reg. Tons	Owner or Managing Owner
134614	F. R. B. No. 1.....	Sault Ste. Marie, Ont.	Sloop.....	Sault Ste. Marie, Ont. 1911	131 0	35 7	9 0	421	Agoma Dredging Co., Sault Ste. Marie, Ont.
134574	J. C. No. 5.....	New Westminster, B.C.	Barge.....	New Westminster,.... 1910	50 0	23 0	5 4	65	J. Crane, New Westminster, B.C.
134575	J. C. VIII.....	"	"	" 1911	64 0	24 0	6 2	81	"
134576	J. C. No. 12.....	"	"	" 1902	60 4	20 0	3 7	32	"
90089	xKing Malcolm.....	Halifax, N.S.	"	Whiteinch, Scotland... 1888	228 0	36 5	21 0	1,304	C. G. Brister, Halifax, N.S.
138171	P. No. 2.....	New Westminster, B.C.	"	New Westminster..... 1911	90 0	30 0	7 0	166	Belyea & Co., New Westminster, B.C.
110559	Silver Queen.....	Maitland, N.S.	Schr.....	Lower Selma, N.S.... 1915	292 0	27 1	8 0	134	A. M. Anthony, Lower Selma, N.S.
138092	Weld.....	Montreal	Barge.....	Montreal 1915	132 2	31 5	8 8	291	T. Hall, Montreal

x A recovered wreck.



## The Interstate Commerce Commission's Interference With Lake Traffic.

The Northwestern Miller, of Minneapolis, Minn., the leading milling publication in the United States, says in a recent issue:—

The Lehigh Valley Rd. has petitioned the Interstate Commerce Commission for a rehearing on its application to be allowed to continue its lake service, which, in common with that of other railways operating lines on the lakes, was ordered stopped because the commission held that such service violated the terms of the Panama Canal Act. This act, commonly supposed to apply specifically to lines operating through the Panama Canal, was given general application by the simple inclusion of two words, 'and elsewhere,' thus bringing under its provisions the Great Lakes, according to the ruling of the Interstate Commerce Commission, a result no doubt never contemplated by the majority of those who voted for the measure in Congress, believing it to be intended only for regulating traffic through the canal.

Taking advantage of this opportunity, the Interstate Commerce Commission promulgated a ruling which is one of the most preposterously destructive acts ever perpetrated by this body, totally disrupting, and destroying an established system of lake transportation, which has been of incalculable benefit to the western shipper and receiver, in the hope of encouraging an imaginary system of so-called 'independent' transportation, which, by a disjointed and disconnected service, is to accomplish what the commission considers 'competition,' but which actually would be a state of irresponsible chaos. Thereby it is the desire of the commission to turn backward the wheels of progress and revert to a system of transportation which was out of date a quarter of a century ago.

"In its interpretation of the meaning of the act, the commission is doubtless sincere, believing that in some mysterious way an independent system will come into being which shall give shippers the benefit of a competition which they do not at present have, and cannot under existing conditions obtain. The commission has been led into this belief by the persistent outcry of the paid agitators employed by certain associations and trade organizations. For some time actual shippers have been aware that, on the whole, the work of these agitators has been mischievous and even dangerous, but they are powerless to restrain them; the machinery for their employment having been put in operation, no way is provided either for detecting them wisely or suppressing them altogether. At first, no doubt, these hired 'experts' accomplished some good, and fully earned half their salaries. There were real grievances and discriminations, and these were rectified. But, by the same token, as each town had its own 'expert,' each plugging and pulling for his own community, their efforts practically offset each other; no city secured a permanent advantage in rates over the other, and the gain of one was nullified by the gain of the other.

"When all the obvious and real inequalities were settled, the 'expert' found himself in a perilous position. It was still incumbent upon him to 'make good' or lose his place. He then developed into the local oracle on freights, the man who had a grievance, the walking delegate who was the retained and paid foe of the carrier, the confirmed trouble breeder whose glib tongue was always heard telling about the iniquities of the existing transportation system; the advocate of the new, the untried, the irre-

sponsible and the theoretical; the first to appear before committees and commissions, urging the interests of those he represented, an agitator paid to be a thorn in the flesh, under the theory that nothing is gained except by constant complaint and eternal protest.

"The civic organizations that support and keep in motion these 'experts' rarely represent the real shippers either by their membership or their published sentiments. Mostly they are composed of real estate operators, local bankers, retailers, and a vast conglomeration of clerks, salesmen and subordinates, who like to imagine themselves representative citizens. Shippers who have a large and comprehensive view of traffic matters have long since withdrawn their support. They now wish they had never mistakenly set in motion the mischievous machinery they no longer control.

"Such influences as these, which really signify nothing but a distorted sense of local patriotism, are responsible for the hue and cry raised against the railway controlled lake lines which are now threatened with extinction. To these the Interstate Commerce Commission has evidently listened, not wisely but too well. If its ruling is not reversed, the western shipper and receiver, now so dependent upon lake transportation, will find themselves facing a situation nothing short of calamitous in the very near future. For this they may thank the walking delegates of their local trade unions, whether or not they themselves are members in good standing."

**Alleged Shortage of Tonnage for Canadian Meat.**—In response to questions in the British House of Commons, Nov. 11, regarding a statement that Canadian meats could not be shipped owing to a shortage of refrigerator vessels in the Canadian trade, the President of the Board of Trade stated that several cargoes of meat had been purchased in Canada, and he was in communication with the Government regarding further purchases, and that only insulated spaces on British vessels usually trading to Australia, New Zealand and the River Plate had been requisitioned.

## The Loss of the s.s. Capilano.

Judgment in the enquiry into the causes of the foundering of the Union Steamship Co.'s s.s. Capilano off Texada Island, Oct. 1, was delivered at Victoria, B.C., Nov. 4, by Cap. J. D. Macpherson, acting Wreck Commissioner, as follows:—"The court, having carefully studied the evidence adduced, is unanimous in its decision that the loss by foundering of the s.s. Capilano in the early hours of Oct. 1, was directly due to her having struck some submerged obstruction about 9.25 on the night previous. The evidence, which, with a few exceptions, was singularly straightforward, clearly points to the fact that in striking the submerged obstruction she received serious but hidden damage, which, though unseen and undiscovered, was, nevertheless, strongly suspected by the master and most of the crew. The rather unusual examinations held and precautions taken after the impact, and continued throughout the night until almost the time the ship was abandoned, go to prove the last statement. The opinion of most of the witnesses examined was that the vessel had struck a submerged log or logs. Whatever she struck can never be proved, owing to the total loss of the ship in comparatively deep water and the impossibility of being able to examine the nature of the damage sustained. Taking into consideration, however, that the night was very dark and the atmosphere thick with smoke, and the probability that owing to these conditions the vessel, when rounding Scotch Fir Point, was farther off than was estimated, thus bringing her nearer to the Texada Island shore on her next course, and the very significant fact that the master, who had been lying down in his cabin since about 8 p.m., when awakened by the sound of the whistle being blown, went into the wheel house and immediately said, 'We are too close in. Haul her to the westward. Port,' and it was while executing this manoeuvre and under port helm that the vessel struck, the court is of the opinion that the Capilano was too close to the Texada Island shore, and that the submerged obstruction that she struck was not a log or logs, but a rock.

"Owing to there being an element of doubt, however slight, as to what the submerged obstruction was, the court is of the opinion that the master, Samuel Nelson, is entitled to the benefit of the doubt, and as he has hitherto held a blameless record and

## Sault Ste. Marie Canals Traffic.

The following commerce passed through the Sault Ste. Marie Canals during October.

ARTICLES		CANADIAN CANAL	U. S. CANAL	TOTAL
Copper.....	Eastbound	Short tons 6,752	15,526	22,278
Grain.....	"	Bushels 3,848,973	5,841,877	9,690,850
Building stone.....	"	Short tons		
Flour.....	"	Barrels 638,630	984,330	1,572,960
Iron ore.....	"	Short tons 1,405,762	5,470,808	6,876,570
Pig iron.....	"	" 2,070	6,656	8,726
Lumber.....	"	M. ft. b.m. 4,716	58,568	63,284
Wheat.....	"	Bushels 17,603,834	47,783,522	65,387,356
General merchandise.....	"	Short tons 16,207	40,259	56,466
Passengers.....	"	Number 452	85	537
Coal, hard.....	Westbound	Short tons	260,188	260,188
Coal, soft.....	"	" 105,693	1,537,590	1,643,283
Flour.....	"	Barrels		
Grain.....	"	Bushels 373		373
Manufactured iron.....	"	Short tons 4,726	19,652	24,378
Iron ore.....	"	" 1,500		1,500
Salt.....	"	Barrels 8,540	113,876	122,416
General merchandise.....	"	Short tons 46,853	163,905	210,758
Passengers.....	"	Number 313	59	372
Summary.				
Vessel passages.....	Number	810	2,421	3,231
Registered tonnage.....	Net	1,977,901	7,305,369	9,283,260
Freight—Eastbound.....	Short tons	2,107,436	7,292,000	9,399,436
—Westbound.....	"	158,498	1,999,917	2,158,415
Total freight.....	"	2,265,934	9,291,917	11,557,851



has been highly spoken of by the Managing Director of the company to which the Capilano belonged, the court will not, in this instance, deal with his certificate, and returns same to him. It nevertheless severely censures him for retiring to his cabin under the conditions of weather then prevailing, and leaving an uncertified man, however experienced, in charge of the ship. This is not only a very reprehensible practice, but is distinctly contrary to the rules and regulations of the company to which the ship belonged. In the opinion of the court 8 p.m. is not a fit and proper time for a master of a steamer to retire when the weather is

thick and the next port of call is only 11 miles distant. The court, therefore, in severely censuring him also warns him as to his procedure in these waters in the future. The court blames Fletcher Hemmonds, second officer, for not calling the master under the existing circumstances, more especially as the vessel was then getting close to her next port of call, Van Anda. As he does not possess a certificate the court cannot deal with him in any other manner but to warn him that if ever he does possess one he will be held responsible, under like conditions, when he fails at once to advise the master when in any doubt."

### Shipping Letters From the Head of the Great Lakes.

F. & W. Jones, Shipping Brokers, Fort William, Ont., have written as follows:—

**Nov. 6.**—Eight cargoes of coal were unloaded during the week, all bituminous. One boat is now under the rigs and 12 are en route. This line-up will keep the docks busy for the best part of the week. Dispatch in unloading is good, and boats are having no hold up and docks work nights when requested. Car shipments to the west are still very good and there is every prospect that they will keep normal for the balance of the season.

Grain shipments from the Canadian head of the Lakes during the first week in November show an increase of 1,000,000 bush. over the last week of October, total shipments being 12,952,550 bush. The number of cargoes this week was seventy, 31 going to Buffalo and Lake Erie side ports and 39 to Canadian ports. Receipts have dropped off slightly this week, being 15,627,922 bush. against 16,374,885 last week. Stocks have accumulated slightly and dispatch in loading is consequently better.

Conditions in the harvest fields are very favorable and threshing is well in hand. The car situation is somewhat relieved, although the effect has been felt rather severely during the past week, and a big increase in receipts from now on is looked for.

**Nov. 13.**—Coal arrivals fell off this week, five cargoes being unloaded. This was entirely owing to the severe weather that has prevailed on the lakes the last few days. Ten steamships are en route, five of which are over due. This will mean a slight congestion, but as five of the vessels are less than 3,000 tons it will not be serious. Half of the 100,000 tons mentioned in our letter of Oct. 30 may be reckoned to have come forward, but other docks are still looking for fairly big receipts so that at the moment the outlook is for receipts to continue at about the present rate until the close of navigation. Car shipments to the west are still about the same as at last writing, and cannot be considered as above normal.

Grain shipments during the week show an increase of approximately 500,000 bush. over last week, being 13,391,191 bush. of all kinds of grain. The number of cargoes was forty-nine, 30 being consigned to Buffalo and Lake Erie side ports and 19 to Canadian ports. Receipts from the west continue about the same, being 15,720,196 bush. of all grains. Stocks show an increase over last week, being 23,226,303 bush. of all grains. Dispatch in loading has been good, and in but few cases have vessels had to call at more than two elevators. It is expected that before the close of lake navigation the Canadian Government railways will announce an all rail grain rate from Fort William and Winnipeg to St. John, which will be such as to permit the export of many millions of bushels of the western crop during the winter. The Government will utilize the Na-

tional Transcontinental and Intercolonial Railways for the winter grain route, and there is no doubt that the C.P.R. and C.N.R. will meet the Government rate.

Grain continues to go down the lakes in record breaking quantities, and if the present European demand continues it is anticipated that about 110,000,000 bush. will have been shipped from Fort William and Port Arthur by the close of lake navigation. The estimated exportable surplus of the western crop is 250,000,000 bush., the storage capacity at the head of the lakes is about 45,000,000 bush., leaving for storage in interior elevators, or to be shipped out during the winter months, about 95,000,000 bush. The world's weekly requirements are about 9,000,000 bush., and from North America alone for the past five weeks about 11,000,000 bush. per week have been going to Europe. There must, therefore, be an accumulation of wheat stocks there, and this with the Argentine and Australian export period nearly at hand may in a considerable measure check the Canadian grain movement. Stocks in store at date, receipts and shipments during the week, are as follows:

	Stocks.	Receipts.	Shipments.
Wheat . . . . .	18,231,048	12,367,940	11,007,651
Oats . . . . .	4,013,561	2,947,807	2,117,064
Barley . . . . .	531,577	290,071	132,458
Flax . . . . .	450,117	114,384	134,007

**Nov. 20.**—Coal arrivals during the past week show an increase over last week, 12 cargoes having been unloaded, all bituminous. Three cargoes are reported en route. Dispatch in unloading has been good; during the first few days of the week there were vessels waiting turn at three of the docks. This was owing to vessels having been held below during the storm of the week previous, but the docks worked continuously on boats until they were unloaded, and no serious congestion resulted. Car shipments to the west remain about the same, being barely a normal movement.

Grain movement here continued fairly active during the past week, showing a slight increase in lake shipments over the previous week, the total loaded into vessels being 13,858,708 bush. This was carried in 56 vessels; 31 going to United States ports and 25 to Canadian. Receipts from the western provinces are good, but have not reached the amount received in last week's statement; this, consequently, together with improved shipments, makes a slight decrease in total stocks on hand, which now stands at 22,923,185 bush. of all grains, or approximately half of the elevator total capacity of the two ports. Dispatch in loading has been good, many cargoes being collected at only one elevator. At time of writing there are some 15 vessels overdue for grain cargoes, and were it not for the adverse weather on the lakes, no doubt a larger total shipment would have been made during the week. Threshing in the west has made good progress of late. It is estimated that Manitoba has finished, but two other

provinces still have a large amount to thresh. Farmers in those provinces have, in many cases, stacked their grain, thus enabling them to hold it safely indefinitely. It is estimated that there will be a continual movement of grain from the west to the head of the lakes well into next spring, partly on account of delayed threshing and partly on account of delay in railway transportation. The opening of navigation for 1916 should therefore find elevators at the head of the lakes well stocked, and the opening should bring active demand for lake space. It is computed that less than 40% of the estimated exportable surplus of all grains will have been moved east at the close of navigation. Stocks in store at date, receipts and shipments during the week:—

	Stocks.	Receipts.	Shipments.
Wheat . . . . .	17,932,173	10,337,717	10,636,593
Oats . . . . .	3,903,262	2,746,875	2,857,175
Barley . . . . .	557,764	308,425	282,237
Flax . . . . .	529,985	162,571	82,703

The Panama Canal Commission announces that due to continued earth movements, the condition of the channel at the bases of the east and west Culebra slides was essentially the same at Oct. 12, as it was a week previous, the material removed during that period being about equal to the movement into the prism. It is deemed inadvisable therefore at this time to predict any approximate date for the reopening of the canal, and shipping interests are being advised to use some other route until further notice, which will be given as soon as material is removed sufficiently to insure more stable conditions. For the seven days prior to Oct. 12, 208,732 cubic yards of soil was removed from the prism, the work being continued at high pressure.

**Dominion Wreck Commissioner's Judgment Questioned.**—A question was asked in the British House of Commons, Oct. 27, regarding the Dominion Wreck Commissioner's judgment on the Batiscan-Bengore Head collision, which suspended the certificate of the master of the s.s. Batiscan for two years and granted a chief mate's certificate for the latter 12 months of that period. In the question, stress was laid on the fact that there was no loss of life following the collision. The Secretary of the Board of Trade replied that the matter was receiving careful attention.

**Toronto Harbor Improvement Works.**—In an interview at Toronto, Nov. 3, the Minister of Public Works stated that he had had a conference with the Canadian Stewart Co., the general contractors for the works for the improvement of the Toronto harbor, and all the matters in dispute in connection with the quality of certain work carried out under subcontracts had been cleared up, and no further difficulty need be expected.

**The Iperia Shipping Corporation Ltd.** has been incorporated under the Dominion Companies Act, with \$1,000 capital and office at Montreal, to carry on a general steamship owning and managing business, and to engage in the carrying of passengers and cargo on the high seas and inland waters. The incorporators are: R. M. Page, New York; L. Macfarlane, W. B. Scott, A. Knatchbull-Hugesson and J. G. Cartwright, Montreal.

**Prince Edward Island Car Ferry Operation.**—The Charlottetown, P.E.I., Board of Trade has been advised by F. P. Gutelius, General Manager, Canadian Government Railways, that the car ferry steamship Prince Edward Island will be placed in service between the mainland and the Island during the winter. During the first part of the season it will operate between Pictou and Charlottetown, and later between Pictou and Georgetown.



### Atlantic and Pacific Ocean Marine.

The navigation of the St. Lawrence River to Montreal, which usually closes about Nov. 20, is, it is stated, to be continued until ice renders conditions dangerous.

A press dispatch from London, England, states that the British Government has released three captured German sailing vessels, the *Terpsichore*, *Chili* and *Carl*, for carrying grain from Canada to Europe.

The Norwegian Government is reported to have ordered two bulk freight steamships to be built in Cleveland, Ohio, and it is stated that the number will probably be increased to six.

The British s.s. *Rio Lages*, which was reported to be on fire, about 280 miles from Halifax, N.S., early in November, when bound from New York to Queenstown, Ireland, with sugar, arrived at Halifax, Nov. 5.

The British s.s. *Oakfield* was reported via Cape Race by wireless, Nov. 22, to be disabled in mid-ocean, through the loss of her propeller blades during a heavy storm. The s.s. *San Giorgio*, of New York, was standing by.

The s.s. *Baerenfels*, which arrived at Montreal, Nov. 11, was formerly owned in Germany, and was captured by a British war ship off Alexandria, Egypt, in Sept., 1914, and became British property by judgment of a prize court.

The Pacific Mail Steamship Co.'s s.s. *Persia*, formerly *Coptic*, is reported to have been sold to the *Toyo Kissen Kaisha*, of Japan, for \$450,000. She was built at Belfast, Ireland, in 1881, and is 4,356 gross tons and 2,744 register.

It is reported that six steamships have been dispatched from Nova Scotia, loaded with cars built for Russia, by the Eastern Car Co. They are on their way to Vladivostok, the vessels being divided between two routes, via Cape Horn and via the Suez Canal.

Two steamships, the *Hamborn* and *Hocking*, sailing under the United States flag, were seized and taken to Halifax, N.S., recently, and it is reported that they are to be dealt with in the prize court there. They were formerly under German ownership, and it is contended that the transfer is not legal.

Furness Withy and Co. have inaugurated an additional trans-Atlantic service between Philadelphia and Glasgow with the steamships *Lowther Range*, *Hambleton Range* and *Annapolis*. It is expected that an additional vessel will be employed and a fortnightly service maintained.

A press report states that Furness, Withy and Co. have purchased the steamships *Den of Crombie*, *Den of Glamis*, *Den of Kelly* and *Den of Ruthven*, from the *Barrie Shipping Co.*, Dundee, Scotland, and that they will be renamed and placed in service between England and American ports.

The C.P.R. has purchased the s.s. *Franktor* from the *Palace Shipping Co.*, Liverpool, England, and has changed its name to *Mattawa*. She is a sister vessel to the C.P.R. s.s. *Medora*, which was formerly the s.s. *Frankmount*, purchased from the *Palace Shipping Co.* earlier in the year.

The *Cunard Co.*'s s.s. *Ste. Cecilia*, which grounded in the St. Lawrence River at *Maisonneuve*, Nov. 13, was released, Nov. 15, and taken back to her dock, without damage. She was lightered of about 500 tons of cargo, which was afterwards restowed.

The *Osaka Shosen Kaisha* s.s. *Manila Maru* arrived at Victoria, B.C., Nov. 12, on her maiden voyage from Japan to British Columbia and Puget Sound ports. An average speed of nearly 14 knots an hour was

maintained, and the journey from Yokohama to Victoria occupied a little over 13 days.

The s.s. *Turret Chief*, formerly owned by the Canadian Lake and Ocean Navigation Co., and wrecked in the Great Lakes disaster of Nov. 1913, and which was eventually salvaged, repaired and sold to A. B. Mackay, Hamilton, Ont., is reported to have been sold to British interests. She has been utilized for some time in carrying war supplies to Europe.

The C.P.R. winter schedule of passenger steamship sailings comes into operation Dec. 3, with the sailing of the s.s. *Misanabie* from Liverpool and its arrival at St. John, N.B., Dec. 13. This vessel and the s.s. *Metagama* alternately, will make eight round trips, concluding Apr. 15, 1916, and neither of the vessels will call at Halifax, either eastbound or westbound.

The Norwegian owned s.s. *Wacousta*, under charter to the *Nova Scotia Steel and Coal Co.*, and which was carrying a consignment of box cars built by the *Eastern Car Co.*, from Pictou, N.S., to Vladivostok, Russia, was reported, Nov. 14, to have been sunk by an enemy submarine, off the west coast of Crete, in the Mediterranean Sea. The crew are reported to have been saved.

In addition to the s.s. *Empress of Japan*, the release of which was announced in our last issue, the British Admiralty has released the C.P.R. steamships *Empress of Asia* and *Empress of Russia*, all of which have been in use as auxiliary cruisers since the commencement of the war. They are being refitted at Hong Kong, and will be replaced in service between Vancouver and the Orient shortly.

The s.s. *Hendon Hall*, owned by *Furness Withy and Co.*, which was wrecked at *Pointe des Montes* in the spring and abandoned to the underwriters, but which was eventually salvaged and taken to St. Joseph de Levis, where she has been repaired, at a reported cost of \$95,000, is stated to have been sold to the *West Hartlepool Navigation Co.*, West Hartlepool, Eng.

The *Pacific and Eastern Shipping Co.* is reported to have been incorporated in New York State, with \$2,000,000 authorised capital, with the chief object of purchasing a contract executed in Pekin, China, between the Chinese Government and F. Hartens and Sons, Cumberland, Md., and a citizen of Pekin. It is stated that Chinese are the chief shareholders, among them being the Chinese Ambassador at Washington, D.C., who is about to retire.

The *France and Canada Steamship Co.*, the incorporation of which has been previously mentioned, has inaugurated a steamship service between Canada and France, with the steamships *Carpattia* and *Utonia*, formerly of the *Cunard Line*. It is stated that the chief feature of this service will be the transport of horses for war purposes, from a U.S. port after the St. Lawrence is closed for the winter, and that 10 vessels will be engaged.

It was reported in Sydney, N.S., Nov. 16, that the s.s. *Dunelm*, owned by *Canada Steamship Lines, Ltd.*, and under charter to the *Dominion Iron and Steel Co.*, had met with some disaster at sea. She sailed from Sydney on Oct. 16, with a full cargo of steel for Manchester, England, and up to the date mentioned had not been heard from. She carried a crew of 25. She was built at Sunderland, England, in 1907, of steel, equipped with triple expansion engines, 19½, 33 and 54 ins. by 36 ins. stroke, supplied with steam by two Scotch boilers 12½ by 11½ ft. with forced draught. Her dimensions are: length, 250 ft.; breadth, 43 ft.; depth, 26½ ft.; tonnage, 2,318 gross, 1,480

register. She was originally owned by R. O. and A. B. Mackay, Ltd., Hamilton, which was absorbed by *Inland Lines, Ltd.*, and later by the *Richelieu and Ontario Navigation Co.*, which was afterwards merged in *Canada Steamship Lines, Ltd.*

### Maritime Provinces and Newfoundland.

The St. John, N.B., harbor revenue for October was \$4,519.22 against \$4,447.19 for Oct., 1914.

Rhodes, Curry and Co., Amherst, N.S., have received instructions to proceed with the construction of a new shed 80 by 350 ft. on No. 15 pier at St. John, N.B.

The Newfoundland sealing vessel *Iceland*, under construction at Greenock, Scotland, is reported to have been taken over by the British Government for naval purposes.

The Canadian Whaling Co.'s s.s. *Grib*, which ran ashore on *Anticosti Island* in October, and which was abandoned to the underwriters after several attempts to float her failed, was sold by tender, Nov. 10.

The *Dominion Coal Co.*'s shipments up the St. Lawrence this year are stated to be about 1,500,000 tons, 400,000 less than last year, which was a record. The company's output for November was 33 1-3% over Nov., 1914.

The *Eastern Steamship Corporation's* s.s. *Governor Cobb* sailed from St. John, N.B., Nov. 15, on her last trip to Boston, Mass., for the season. She will be overhauled at Boston, and be placed in service between Key West and Havana for the winter.

Mention was made in our last issue of certain whaling vessels owned in Newfoundland, which it was stated the Russian Government was considering purchasing for ice service in the White Sea. It is now stated in New York that the s.s. *Beothic* has been acquired, the price paid being given as \$290,000. The steamships *Adventure*, *Bellaventure* and *Bonaventure* were inspected and tested during November by Russian Government agents.

The steamships *Easington* and *Kron Prins Olav*, under charter to the *Dominion Coal Co.*, are definitely considered to have been lost while en route with coal from North Sydney, N.S., to St. John and Montreal respectively. They sailed from North Sydney about Sept. 25, and ran into a storm. Nothing has been heard of them since. The *Easington* was built in 1907, and was 1,387 tons, insured for £20,000. The *Kron Prins Olav* was also built in 1907, was 3,923 tons and insured for £48,800.

### Province of Quebec Marine.

J. A. Samson, Bienville, Que., has been appointed Inspector of boilers and machinery of steamboats, vice J. H. Fontaine, resigned.

The Marine Department has replaced the old wooden range lights, which have been in service for nearly 44 years, along the *Richelieu River* at *Lacolle*, by modern steel structures.

The *Montreal Harbor Commissioners* have added another steam tug to those already in service, making a total of 11. The latest was launched at Montreal, Nov. 11, and named *David Seath*.

The Marine Department gave notice, Nov. 11, that about Nov. 20 the lighthouse building on *Pointe Claire pier*, Lake St. Louis, in the River St. Lawrence, would be removed and replaced by a concrete block surmounted by a gas lantern elevated 10 ft. above the top of the pier.

The *Montreal Drydock and Ship Repairing Co.* has completed the renovating and en-



larging of the Tate drydock at the foot of Mill St., Montreal, abutting on the Lachine canal, and it is stated that the largest grain carriers can now be accommodated there. The dock is operated under lease from the Dominion Government.

Traffic returns for the navigation season for the Lachine Canal show that 35,685,288 bush. of grain passed through to the end of October, compared with 61,811,340 for the same period in 1914. In October 6,432,245 bush. were dealt with against 10,574,568 in Oct. 1914, rather more than half of the decrease being in wheat. The tonnage operated through the canal in October was 573,729 against 704,841 in Oct. 1914, the cargo tonnage being 487,905 and 602,964 for the same periods respectively. The number of vessel passages in October was 1,123, or 41 less than in Oct. 1914.

The Gaspé Steamship Co.'s s.s. *Lady of Gaspé*, which ran ashore near the Quebec Bridge site, while en route from Montreal to Quebec and Gaspé ports, Oct. 13, was floated by compressed air, Oct. 23, and taken to Pointe a Carcy wharf, Quebec, where she sank on the following day, owing to the failure of one of her pumps. She has since been abandoned, and J. Bouchard, Manager of the company, is reported to have stated that she was valued at \$50,000 and was uninsured. She was built at Glasgow, Scotland, in 1877, and was first named *Restigouche*, and later *Rathlin*. Her dimensions were, length 229.7 ft., breadth 31 ft., depth 16.1 ft.; tonnage, 1,189 gross, 705 register, and she was equipped with engine of 180 n.h.p., driving a screw. The Quebec Harbor Commission has refloated the vessel.

### Ontario and the Great Lakes.

The concrete breakwater, recently completed, at the entrance of the Mission River at Fort William, was considerably damaged during a heavy storm, Nov. 10.

The Lake Carriers' Association has recommended a draught of 19½ ft. through the Davis lock at St. Marys Falls in St. Marys River, for vessels bound to Lake St. Clair and Lake Erie ports.

The bell buoy usually stationed at the mouth of the Niagara River in Lake Ontario, and which broke from its moorings at the end of October, is not to be replaced until the reopening of navigation in 1916.

The Great Lakes Steamship Co. is having a vessel built at Toledo, Ohio., at a cost of about \$450,000. It will be 600 ft. long over all, 580 ft. between perpendiculars, 60 ft. beam and 32 ft. deep, and about 12,000 tons gross.

The Marine Department announces the completion of the dredging of the entrance to the Kaministiquia River, in Thunder Bay, to a depth of 25 ft. and a width of 600 ft. The channel has been swept and the buoys rearranged.

The Marine Department announces that only the south half of the dredged channel at the entrance to the Kaministiquia River, Fort William, carries a depth of 25 ft. The north half, or older part of the channel, has a safe depth of 21 ft.

Canada Steamship Lines s.s. *Martian*, while proceeding to the Empire elevator at Port Arthur, Nov. 5, with a partial cargo, collided with the dock and damaged six plates. It was not found necessary to drydock her, part of her cargo being lightered, and the repairs made.

The Marine Department has completed the alterations to the back range lighthouse at Owen Sound. The lighthouse is a square steel skeleton tower with sloping sides, surmounted by two lanterns showing a fixed

white light at an elevation of 92 ft., visible for 15 miles in the line of the range.

The strong winds in the early part of November caused considerable damage in the neighborhood of the Sault Ste. Marie canals. The cofferdam at the head of the Worth lock was torn away, and the swing bridge was put out of business. Traffic was not interfered with on this account, as very little shipping was moving.

A charge in the Toronto Police Court, against Canada Steamship Lines, Ltd., for permitting smoke to be emitted from the funnels of vessels while lying at the Toronto wharves, was dismissed, Nov. 8, it being held that steamships, being under Dominion control, were not amenable to the provisions of civic bylaws.

The United States Lake Survey reports the levels of the Great Lakes in feet above tide water for October, as follows,—Superior, 602.75; Michigan and Huron, 579.81; Erie, 571.99; Ontario, 245.17. As compared with average October levels for the past ten years, Superior was 0.09 ft. above; Michigan and Huron, 0.75 ft. below; Erie, 0.14 ft. below, and Ontario, 0.70 ft. below.

The Rutland Transit Co., which formerly operated steamships on the Great Lakes and to Ogdensburg, N.Y., has sold the last of its vessels, the *Rutland* and *Ogdensburg*, to the Pacific Alaska Navigation Co., Seattle, Wash. The company was owned by the Rutland Rd., which was ordered by the Interstate Commerce Commission to sever its connection with its steamship line, the same not being in the public interest.

The Canadian Stewart Co.'s steam tug A. M. Stewart was launched at Leith, Scotland, recently, and it is reported that two other similar tugs are being built there for the same firm. The dimensions of the A.M. Stewart are, length overall 110 ft., length between perpendiculars 104 ft., breadth 26 ft., depth moulded 14 ft. She is equipped with engine of 900 h.p., and has steam windlass, steam capstan, salvage crane, and complete electric light plant with powerful searchlight.

The s.s. W. D. Rees, of Fairport, Ohio, when drawing 18½ ft. of water, struck in the approach to Key Harbor, Georgian Bay, Nov. 4. Her cargo was lightered before she could be released. The obstruction struck is described as a flat rock with six or seven fathoms of water close to, and situated 240 ft. southeast and abreast of a black spar buoy south of Pratt Island, very close to the middle of the channel marked by the alignment of the Wedge Island range day beacons.

Canada Steamship Lines' steam tug Frank C. Barnes, which left Port Dalhousie, Nov. 1, for Montreal, has been lost with her crew of five. No word was heard of her after sailing, and every effort to trace her has failed. She was formerly owned by the Canadian Towing and Wrecking Co., Port Arthur, and was built at Manistee, Mich., in 1869, and rebuilt in 1892. She was of oak and equipped with non-condensing engine of 240 h.p. Her dimensions were, length 66 ft., breadth 16 ft., depth 8 ft., tonnage 60 gross, 43 register.

The Montreal Transportation Co. has ordered steamship of the single deck, bulk freight type, with double bottom and side ballast tanks, to be built at Collingwood, for delivery by Oct. 1, 1916. The dimensions will be: length over all, 550 ft.; length between perpendiculars, 537 ft.; breadth moulded, 58 ft.; depth moulded, 31 ft. She will be equipped with vertical triple expansion engines, with cylinders 24, 40 and 66 ins. diam., by 42 ins. stroke, supplied with steam by 3 Scotch boilers 13 by 11 ft., at a working pressure of 185 lbs.

The Nipissing-Pontiac Steamboat Co.'s s.s. *Aileen* foundered in Lake Timiskaming, Nov. 11, when en route from Haileybury to North Timiskaming. Apart from the fact that there was a stiff gale on the lake, nothing is known as to the causes of the disaster. The vessel was a small one and carried three of a crew, and one passenger, all of whom lost their lives. The *Aileen*, which was formerly owned by the Upper Ontario Steamboat Co., was built at Perth, Ont., in 1904, and was screw driven by engine of 4 n.h.p. Her dimensions were: length, 68.8 ft.; breadth, 11.8 ft.; depth, 4.4 ft.; tonnage, 38 gross, 24 register.

### British Columbia and Pacific Coast.

The Victoria Shipping Co., Ltd., Victoria, B.C., is being voluntarily wound up, with J. H. Lawson as liquidator.

The C.P.R. s.s. *Princess Victoria* was withdrawn from service during the last week of October for repairs and general overhaul. Her place on the triangular route was taken by the s.s. *Princess Charlotte*.

The C.P.R. steamship service on the Arrow Lakes will be three days a week during the winter, southbound vessels leaving Arrowhead Tuesdays, Thursdays and Saturdays, and West Robson, Tuesdays, Thursdays and Saturdays.

The Alaska Steamship Co.'s s.s. *Mariposa*, which stranded at Bella Bella, while bound from Seattle, Wash., to Alaska ports, recently, was refloated Nov. 3, and taken to McLaughlin Bay. She is reported to have been insured on a value of \$250,000.

The C.P.R. has lost its appeal at Vancouver, in a case where judgment was given against it for damage to the s.s. *Lady Lake*, when, in placing a new boiler in her, the crane slings broke and the boiler, which was also damaged, crashed through the deck.

H. Kemp, formerly Secretary-Treasurer, North Vancouver Ferries, Ltd., who sued the company recently for salary from the time of his dismissal in 1913 to Jan., 1915, has been awarded \$433 and costs, covering salary from his dismissal to his appointment to another position, as it was considered that his summary dismissal was not justified.

The Vancouver Portland Cement Co.'s s.s. *Leona* foundered in the Gulf of Georgia, Oct. 30, and seven of the crew were reported missing. She was bound for Tacoma, Wash., with ore and was caught in a heavy sea. She was built at Paisley, Scotland, in 1905, her hull being of steel, with dimensions, length 185 ft., breadth 30 ft., depth 11½ ft.; tonnage, 700 gross, 308 register.

At a meeting of representatives of financial and shipping interests in Vancouver, Nov. 5, a resolution was passed urging the Dominion Government to appoint a customs officer at New York, to deal with shipping to British Columbia ports via the Panama canal, and also urging the encouragement of the westward movement of grain for shipment through British Columbia ports.

The Alaska Steamship Co.'s s.s. *Mariposa*, which ran ashore on a reef near Napier Point in Lama Passage, off Campbell Island, Oct. 8, was floated and beached in McLaughlin Bay, where temporary repairs were made early in November, after which she proceeded to Seattle, Wash., accompanied by the tug *Salvor*, for complete examination and repairs.

The C.P.R. has filed objections to the Vancouver Harbor Commission's reclamation scheme so far as the work in False Creek is concerned, on the ground that its land on the south shore would be injuriously



...which it is claimed would be formed between the island and the ... by reason of the channel being blocked by the approach from the end of Granville St.

Capt. H. Smith, of the steam tug *Constance*, was fine \$100, at Vancouver, Nov. 5, for carrying passengers, and a further \$50 for towing a launch, in contravention of the laws regarding steam tugs. In the course of the trip during which the offences took place, the tug was lost. The captain pleaded that he was unaware that the men were on his vessel, and to back him up, he referred to his report of the loss of the vessel, where he referred to them as stowaways. The case is of considerable local interest, owing to the general practice of carrying parties of loggers on steam tugs going up for logs.

The bylaw providing for the ultimate municipalization of the ferry service at West Vancouver, operated by the West Vancouver Ferry Co., was defeated, Nov. 1. The company has not been a paying concern, and there has been constant difficulty in financing it. Immediately following the defeat of the proposed bylaw, the company reduced the service to one boat, and gave all employees one month notice. The fare was also raised 25%. It is stated that there is a strong probability that the company will cease business at the end of the 30 days notice. The position is rather a peculiar one, as all the shares are held by the municipality.

The Minister of Public Works inspected the Government works in progress in Vancouver harbor, Nov. 16. He stated that a building would be erected on the recently completed Government dock, and a wharf would be constructed in front of the immigration building, which is almost completed. The erection of other buildings at various points will come up for consideration later on. On the same day he was waited on by representatives of the Board of Trade and the North Vancouver City Council in connection with the projected dry dock, for the construction of which the Amalgamated Drydock and Shipbuilding Co. has been promised a Government subsidy.

**The Loss of the s.s. De Sola.**—The Reid Donald Steamship Co., Montreal, is suing C. Tennant and Sons Co., New York, for \$350,000 for the loss of the s.s. *De Sola*, which was destroyed by explosions and fire caused by the escape of concentrated sulphuric acid, which was being conveyed from New York to Ardrossan, Scotland, in the s.s. *De Sola* while under charter to the defendant company. The circumstances connected with the disastrous voyage were detailed in Canadian Railway and Marine World for April.

**The Loss of the s.s. Hesperian.**—When the Allan Line s.s. *Hesperian* was sunk off the Irish coast on Sept. 4, there seemed to be considerable doubt as to whether she had been the victim of a mine, or had been torpedoed by a German submarine. A press dispatch stated recently that the Navy Department at Washington had announced that a fragment found on board the vessel and removed by one of the passengers, had been definitely recognized as a part of a torpedo.

**New Russian Arctic Port.**—A recent press report from Paris, France, states a railway has been completed from Petrograd, Russia, to the harbor built recently at Ekaterina, on the edge of the Arctic circle, on the northern coast of the Gulf of Kola. The port is said to be free from ice the year round. The railway is 1,200 miles, and was built in six months by about 10,000 men, mostly war prisoners, under the direction of American engineers.

## Government Steamships on Hudson Bay Route.

Ottawa press despatch, Nov. 19 (unconfirmed): "A Government owned line of steamers out of Hudson Bay will be established, it is understood, on the completion of the line and the terminals at Canada's new northern port and will be in operation in time to carry part of the 1917 wheat crop to its destination overseas it is hoped. Work on the construction of the line is being expedited with a view to completing the laying of steel by the fall of next year. If this is done as stated, the route will be in a position to compete for the movement of the Canadian grain crop in 1917. On account of the prejudice against the route by the results of careless navigation in Hudson Bay, it is expected that insurance rates will at first be so high that it will be necessary for the Government to operate its own line of steamers. This, it may be stated, will, according to present intentions, be done."

In reference to the above we are officially advised that at present there is nothing in the report that a Government line of steamships is to be established to connect with the Hudson Bay Railway, and that the matter is entirely one for the future.

## Mainly About Marine People.

C. L. Monroe has been appointed agent, Pacific Coast Steamship Co., Prince Rupert, B.C., vice J. H. Rogers.

H. Maitland Kersey, Manager in Chief, Ocean Services, Canadian Pacific Ry., London, Eng., is in Canada on a business trip.

J. L. Michaud, A.M.Can.Soc.C.E., who died at Montreal, Nov. 14, aged 64, was for 13 years Chief Engineer, Dominion Public Works Department, there.

A. Angstrom has been appointed Naval Architect, Canadian Northern Ry., with office at Toronto. His first work is the designing and supervision of building of a car ferry to run between Steveston and Patricia Bay, B.C.

Clark Hamilton, who died at Kingston, Ont., Nov. 10, was for some years prior to 1882, when he was appointed Collector of Customs, engaged in steamboat business, and commanded the s.s. *Kingston* when the late King Edward, then Prince of Wales, sailed up the St. Lawrence in 1860.

Charles Hughes, who died at Montreal West, early in November, formed a link with the period of Lower Canada and early navigation on the St. Lawrence River. His father was agent at Three Rivers for the Molson line of steamships, and he was for some time a purser on one of those vessels.

Capt. C. T. Knowlton has been appointed Superintendent of Ferries, Canadian Government Railways, in charge of floating equipment. Employees on all floating equipment report to and receive instructions from him, and he reports to the General Superintendent, Intercolonial Ry. Office, Moncton, N.B.

Major Adolphe V. Roy, M.Can.Soc.C.E., formerly Vice President, Sincennes-McNaughton Line, Ltd., Montreal, whose death while performing a heroic action at the front was mentioned in our last issue, is stated to be amongst those recommended for the Victoria Cross. There are several precedents for such a posthumous award.

A. Gordon, at present Lieutenant-Engineer, R.N.R., of H.M.S. *Jupiter*, and formerly Chief Engineer s.s. *Princess Charlotte*, B.C. Coast Service, C.P.R., Vancouver, B.C., has been awarded the Russian Imperial Order of Ste.

Anne, third class, for services, while engaged in keeping the port of Archangel open last winter under exceptional difficulties.

Capt. J. V. Forster, R.N.R., who has been appointed General Superintendent, Canadian Pacific Ocean Services, Ltd., formed by the C.P.R. steamships and the Allan Line, Liverpool, England, spent his early years at sea in the ships *Highfield* and *Milton Stuart*. In 1889 he entered Elder Dempster and Co.'s service as second mate on the s.s. *Yola*, and three years later was given command of the s.s. *Ashanti*, and a year later transferred to the s.s. *Mount Temple*. The first two vessels were engaged in the West African trade, and the last in the Canadian trade, and it was eventually acquired by the C.P.R. when it took over the Beaver Line to form the nucleus of its fleet. In 1913 he was presented with a gold watch and chain by the President of the United States for services rendered in rescuing the crew of the schooner *Percy* and *Lily* when the vessel foundered in mid-ocean. He succeeded Capt. H. Mowatt as Marine Superintendent, C.P.R., at Liverpool in 1913.

**Emigration and Military Service.**—Various reports have been cabled from England recently, as to the large numbers of men of military age, who are emigrating from Great Britain and Ireland, with a view to avoid possible compulsory military service. Enquiry at the Canadian Emigration Office, London, England, proves that so far as Canada is concerned, there is no truth in the reports, as from the commencement of the war, emigration has been discouraged, and enquiries from men of military age do not average six a month. This policy is strictly followed out also at the C.P.R. and G.T.R. offices; in fact, if a young man of service age makes such enquiries, he is referred to a recruiting sergeant.

**The Regional Construction Co., Ltd.**, has been incorporated under the Dominion Companies Act, with \$100,000 authorized capital and office at Montreal, to carry on business as contractors and builders of railways, telegraph, telephone and transmission lines, canals, bridges, wharves and all kinds of public works. The incorporators are C. G. Hebert, A. Laberge, E. H. Godin and J. E. Morier, Montreal, and E. Lambert, St. Jacques des Piles, Que.

**The Hillsborough Plaster, Quarrying and Manufacturing Co.** has been incorporated under the New Brunswick Companies' Act to build railways, aerial and other tramways, to be operated by steam, electricity or other power, in connection with its quarries. The company has a capital of \$49,000; its office is at Hillsborough, N.B., and its provisional directors are:—J. Blight, Mrs. I. C. Blight, J. L. Peck, C. W. McLatchy, Hillsborough; J. N. Smith, Coverdale, N.B.

**The Imperial Oil Co.** has been granted a supplementary charter under the Dominion Companies Act, authorizing it to increase its capital stock from \$15,000,000 to \$50,000,000, and to extend its powers in various directions, including the power to lease or otherwise acquire railways necessary for its purposes, and to lay tracks on lands owned by it, and to own rolling stock.

**Quinlan and Robertson, Ltd.**, contractors, Montreal, originally incorporated with \$2,000,000 authorised capital, have had it reduced to \$1,000,000 by supplementary letters patent issued under the Dominion Companies Act.

Already 300 miles of the 1,000 miles of railway across Australia, recommended by Lord Kitchener during his visit to the Commonwealth, for strategical purposes, has been built; and it is expected that the line will be finished by the end of 1916.



### Among the Express Companies.

The Board of Railway Commissioners has approved the Central Canada Ex. Co.'s standard mileage tariff of maximum tolls C.R.C.I.

Since the commencement of the war, 55 employees of the Dominion Ex. Co., in Manitoba and Saskatchewan have enlisted for active service.

The Canadian Northern Ex. Co. has opened offices at Rosebank, Man., Krydor, Canora, Mazenod, Mikado and Spring Valley, Sask.

F. Robertson, a former agent for the Dominion Ex. Co., at Windsor, Ont., has recently pleaded guilty, with extenuating circumstances, to the theft of \$615 from the company.

The Dominion Ex. Co. has opened offices at Mason, Two Creeks and Meadows, Man.; Alida, Vidora, Belbeck, Beverly, Archive and Blucher, Sask.; Lomond, Purple Springs and Whitla, Alta., and Rock Creek, B.C.

The Board of Railway Commissioners has approved the Canadian Northern Ex. Co.'s standard tariff of maximum express tolls, C.R.C. 834, to apply on the C.N.R.'s Mountain Division, west of Tollerton, Alta.

The Rochon Express Co., Ltd., has been incorporated under the Quebec Companies Act, with \$20,000 capital and office at Montreal, to transport merchandise on vehicles and vessels of all kinds, and to carry on a general express and transportation business.

H. H. Hines, agent, Jas. Todd, cashier, Canadian Ex. Co., Parkdale, Toronto, and W. Ellis, were each sentenced to one month imprisonment at Toronto, Nov. 10, for the theft of \$2,140 from the company, by the manipulation of rates. The money obtained has been refunded.

Canadian Ex. Co.'s results for the year ended June 30, compared with those for the previous year are as follows:—

	1914-1915.	1913-1914.
Charges for transportation	\$3,117,113	\$3,341,340
Express privileges, Dr.	1,554,427	1,666,472
Operating other than transportation	60,570	114,732
Total operating revenue	1,623,255	1,789,599
Operating expenses	1,536,528	1,661,834
Net operating revenue	83,726	127,765
Express taxes	51,948	28,949
Operating income	31,677	38,816

Central Canada Express Co., Ltd., has been incorporated under the Dominion Companies Act, with \$100,000 authorised capital and office at Winnipeg, to transport for hire to and from places in Canada and elsewhere, merchandise and money, etc., and for such purposes to own, charter and operate steam and other vessels, cars and vehicles, and to carry on the general business of an express company. The incorporators are J. D. McArthur, President; D. W. Campbell, Assistant Secretary-Treasurer, Edmonton, Dunvegan and British Columbia Ry., and Central Canada Ry.; and W. P. McDougall and A. B. Donley, Winnipeg, and J. K. McLennan, Secretary-Treasurer, Edmonton, Dunvegan and British Columbia Ry., and Central Canada Ry., Edmonton, Alta. Peter McArthur has been appointed General Superintendent, with office at Edmonton, Alta.

### Telegraph, Telephone and Cable Matters.

The Great North Western Telegraph Co. has taken an office in the Northern Crown Bank Building, Regina, Sask., and is making additions to its equipment there.

The Dominion Government telegraph line across Hastings Arm, Observatory Inlet, B.C., has been replaced by a cable from Larcom Island to the main land at approximately the same point as the wire, which has been removed.

The C.P.R. Telegraphs has opened a branch telegraph office at 2115 Granville St., Vancouver, B.C., for handling business from the West Fairview, Kitsilano and False Creek districts.

During a heavy storm throughout the Maritime Provinces, Nov. 5 and 6, telegraph business suffered considerable dislocation, in fact all the companies operating overhead wires had to keep large gangs of men out for some time repairing wreckage.

Subsequent to the annual meeting of Grand Trunk Pacific Telegraph Co. shareholders at Montreal recently, details of which are not made public, H. Hulatt, Manager of Telegraphs, G.T.R. and Grand Trunk Pacific Ry., was elected a director of the company.

Referring to the report mentioned in Canadian Railway and Marine World for November, to the effect that G. D. Perry, General Manager, Great North Western Telegraph Co., had stated in Vancouver that his company purpose stringing a double copper line between Montreal and Vancouver for commercial business, we are officially advised that his statement was misinterpreted. It was stated that if it had not been for the heavy advance in the price of copper, the company would probably have erected a copper wire between Montreal, Toronto and Vancouver. With the present prices prevailing, the cost of the wire would be about \$275,000, and the total expense about \$300,000. The proposition is therefore held over for the present, and it is unlikely that any action will be taken until the copper market becomes normal.

The Grand Trunk Pacific Telegraph Co. has been appointed Supervisory Agent of telegraphs for the National Transcontinental Ry. between Moncton, N.B., and Winnipeg, including the Lake Superior Branch to Fort William, Ont., with jurisdiction over all matters appertaining to the construction and maintenance of telegraph and telephone lines and the operation of railway and commercial telegraphs, the following officers having jurisdiction:—H. Hulatt, Manager of Telegraphs, G.T.R. and G.T.P.R., and Thomas Rodger, Supervisor, G.T.R., Montreal, and F. T. Caldwell, Division Superintendent of Telegraphs, G.T.P.R., Winnipeg.

The Great North Western Telegraph Co. has opened offices at Agate, Banning, Bolger, Caledonia, Capreol, Devlin, Dorion, Fire River, Foleyet, Glenorchy, Hillsport, Hornepayne, Huronian, Jellicoe, Longueac, Mille Roches, Nipigon, Oba, Orient Bay, Ruel, Stackpool and Strathcona, Ont.; Badger, Berton, Deloraine, Lorette, Neelin, Rosebank and Vista, Man.; Birdview, Canwood, Chandler, Dumblane, Estevan, Ettington, Mazenod, Mikado, Palmer, Parkside, Parry, Richard, St. Gregor, Spring Valley and Yorkton, Sask.; Excel, Rumsey and Sibbald, Alta.; and has closed its offices at Little Metis Beach, Manoir Richelieu, Pointe au Pic and Valcartier Camp, Que.; Bala Park, Bobcaygeon, Camden East, Chaffey's Locks, Deux Rivieres, Dwight, East Don, Grimsby Beach, Hagersville, Mackeys Station, Mat-tawa, Port Cockburn, Rosseau, Sparrow Lake and Stonecliff, Ont.; and at Sarcee Camp, Calgary, Alta. The names of the following offices have been changed, Shawinigan Jct., Que., to Aldred; Laframboise, Ont., to Alfred Centre, and Mayflower, Ont., to Flanders.

Over 500,000 lbs. of fresh halibut were landed at Prince Rupert, B.C., recently in two days, according to a press dispatch. Seventeen carloads of the fish were sent east on two Grand Trunk Pacific trains.

Furness, Withy and Co., Ltd., have declared a dividend of 2½% for the quarter ended Sept. 30.

### Trade and Supply Notes.

The matter which appears under this heading is compiled, in most cases, from information supplied by the manufacturers of, or dealers in, the articles referred to, and in publishing the same we accept no responsibility. At the same time we wish our readers distinctly to understand that we are not paid for the publication of any of this matter, and that we will not consider any proposition to insert reading matter in our columns for pay or its equivalent. Advertising contracts will not be taken with any condition that accepting them will oblige us to publish reading notices. In other words, our reading columns are not for sale, either to advertisers or others.

**Canadian National Carbon Co., Ltd.**—J. M. Spangler, formerly with the Railroad Supply Co., Chicago, is now connected with the Canadian National Carbon Co.'s sales department.

**The Trolley Supply Co.**, Canton, Ohio, has issued a bulletin describing and illustrating The Perfect Headlight for interurban cars, which is made entirely from 20 gauge pressed steel, the reflector being 12 ins. in diameter in the front and 6 ins. deep.

**Northey-Simmen Signal Co., Ltd.**—Supplementary letters patent have been issued under the Ontario Companies Act, reducing this company's capital stock from \$5,200,000 to \$1,160,000. The company is to be merged with the newly incorporated Diaphone Signal Co., Ltd.

**Goldschmidt Thermit Co.**—The issue of Reactions for the third quarter of the year describes a number of interesting repairs carried out by the thermit welding process, both in railway and marine shops, and an article comparing the results of welding by thermit and by electricity, as adapted to locomotive frames and other heavy sections.

**The Coleman Fare Box Co., Ltd.**, Toronto, has received orders recently for its new No. 4 stationary fare box from the Three Rivers Traction Co., Three Rivers, Que.; Toronto Civic Car Lines; Sandwich, Windsor & Amherstburg Ry., Windsor, Ont.; and Guelph Radial Ry., Guelph, Ont.; and for portable boxes from the Sudbury-Copper Cliff Suburban Electric Ry., Sudbury, Ont.; and the St. John Ry., St. John, N.B.

**The Diaphone Signal Co., Ltd.** has been incorporated under the Dominion Companies Act, with \$825,000 authorized capital and office at Toronto, to manufacture and deal in all kinds of signal devices and with other powers. The company will absorb the businesses of the Northey-Simmen Signal Co., Ltd., Diaphone Signal Co., a New Jersey corporation, the Canadian Fog Signal Co., Ltd., and Northey-Plummer Ltd., of which J. P. Northey, of Toronto, is President.

### Transportation Conventions in 1915-16.

Dec. 7-10.—American Society of Mechanical Engineers, New York, N.Y.

Dec. 14.—Association of Transportation and Car Accounting Officers, St. Louis, Mo.

Jan. 18-20, 1916.—American Wood Preservers' Association, Chicago, Ill.

March 21-23, 1916.—American Railway Engineering Association, Atlantic City, N.J.

May, 1916.—International Railway Fuel Association, Chicago, Ill.

May 2-5, 1916.—Air Brake Association, Atlanta, Ga.

May 19, 1916.—Association of Railway Claim Agents, Atlantic City, N.J.

June 20-22, 1916.—Association of Railway Telegraph Superintendents, St. Paul, Minn.

June 20-23, 1916.—American Association of Freight Agents, Cincinnati, Ohio.

June 21, 1916.—Train Despatchers' Association of America, Toronto.

June 21, 1916.—American Association of General Baggage Agents, Boston, Mass.

June 28, 1916.—Association of American Railway Accounting Officers, Detroit, Mich.

August, 1916.—International Railroad Blacksmiths' Association, Chicago, Ill.

September, 1916.—American and Locomotive Painters' Association of United States and Canada, Wilmington, Del.

September, 1916.—Railway Signal Association, Mackinac Island, Mich.

Sept. 19-22, 1916.—Roadmasters and Maintenance of Way Association, Chicago, Ill.



### Transportation Associations, Clubs, Etc.

The names of persons given below are those of the secretaries unless otherwise stated:  
 Canadian Car Service Bureau—J. Reilly, Manager, 401 St. Nicholas Building, Montreal.  
 Canadian Electric Railway Association—Acton, 70 Bond Street, Toronto.  
 Canadian Freight Association (Eastern lines)—Ransom, Canadian Express Building, Montreal.  
 Canadian Freight Association (Western lines)—W. E. Campbell, 805 Boyd Block, Winnipeg.  
 Canadian Railway Club—J. Powell, St. Lambert, Que. Meetings at Montreal 2nd Tuesday each month, 8:30 p.m., except June, July, and August.

Canadian Society of Civil Engineers—C. H. McLeod, 176 Mansfield St., Montreal.  
 Canadian Ticket Agents' Association—E. de la Hooke, London, Ont.  
 Dominion Marine Association—F. King, Counsel, Kingston, Ont.  
 Eastern Canadian Passenger Association—G. H. Webster, 54 Beaver Hall Hill, Montreal.  
 Engineers' Club of Montreal—R. W. H. Smith, 9 Beaver Hall Square, Montreal.  
 Engineers' Club of Toronto—R. B. Wolsey, 94 King Street West, Toronto.  
 Express Traffic Association of Canada—W. H. Burr, Chairman, Toronto.  
 Great Lakes and St. Lawrence River Rate Committee—James Morrison, Montreal.  
 Hydro-Electric Railway Association of Ontario—T. J. Hannigan, Guelph, Ont.

International Water Lines Passenger Association—M. R. Nelson, New York.  
 Niagara Frontier Summer Rate Committee—James Morrison, Montreal.  
 Nova Scotia Society of Engineers—A. R. McCleave, Halifax, N.S.  
 Quebec Transportation Club—A. F. Dion, Quebec.  
 Ship Masters' Association of Canada—Capt. E. Wells, 45 St. John Street, Halifax, N.S.  
 Toronto Transportation Club—W. A. Gray, 143 Yonge Street, Toronto.  
 Twin Cities Local Freight Agents' Association—E. J. Travers, Fort William, Ont.  
 Western Canada Railway Club—Louis Kon, Box 1707, Winnipeg. Meetings at Winnipeg, 2nd Monday each month, except June, July, and August.

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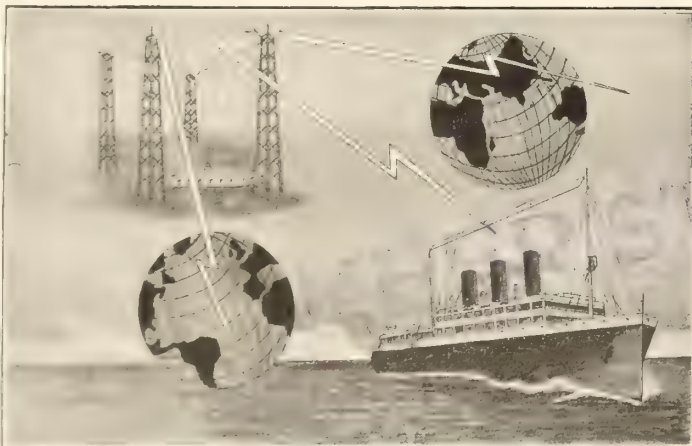
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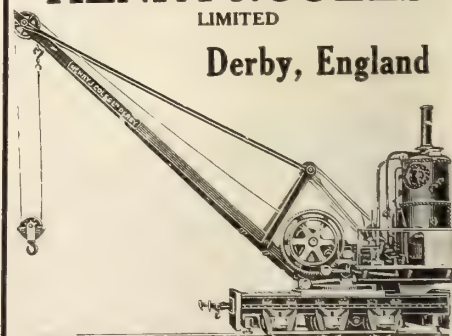
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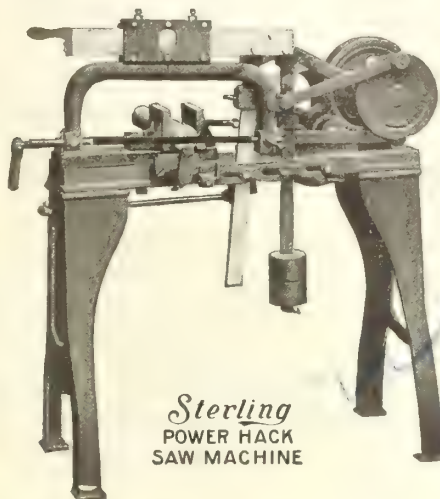
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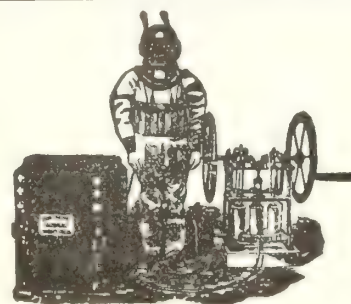
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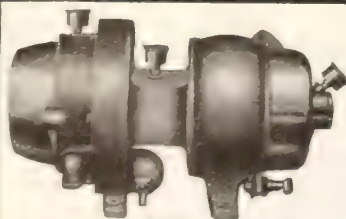
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Subscriptions are based on the service furnished, and are available only by reputable wholesale, jobbing, and manufacturing concerns, and by responsible and worthy financial, fiduciary, and business corporations. Specific terms may be obtained by addressing the Company at any of its offices. Correspondence invited.

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THOS. C. IRVING,  
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**CANADIAN PACIFIC RAILWAY COMPANY****Dividend Notice.**

At a meeting of the Board of Directors, held to-day a dividend of two and one-half per cent. on the Common Stock for the quarter ended 30th September last, being at the rate of seven per cent. per annum from revenue and three per cent. per annum from Special Income Account, was declared payable on 31st December next, to Shareholders of record at 3 p.m. on 30th November instant.

By order of the Board,

W. R. BAKER, Secretary.

Montreal, 8th November, 1915.

**NOTICE.**

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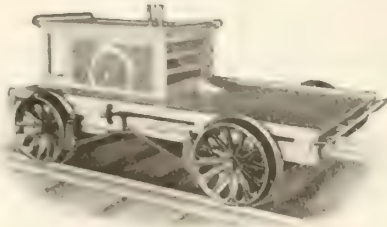
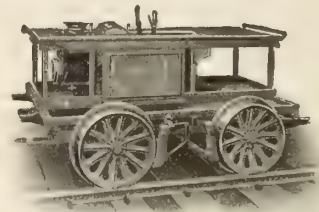
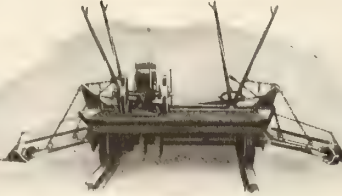
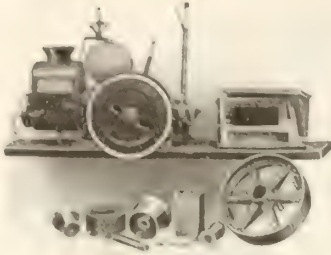
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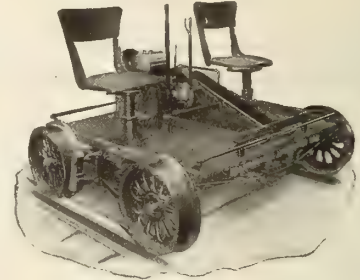


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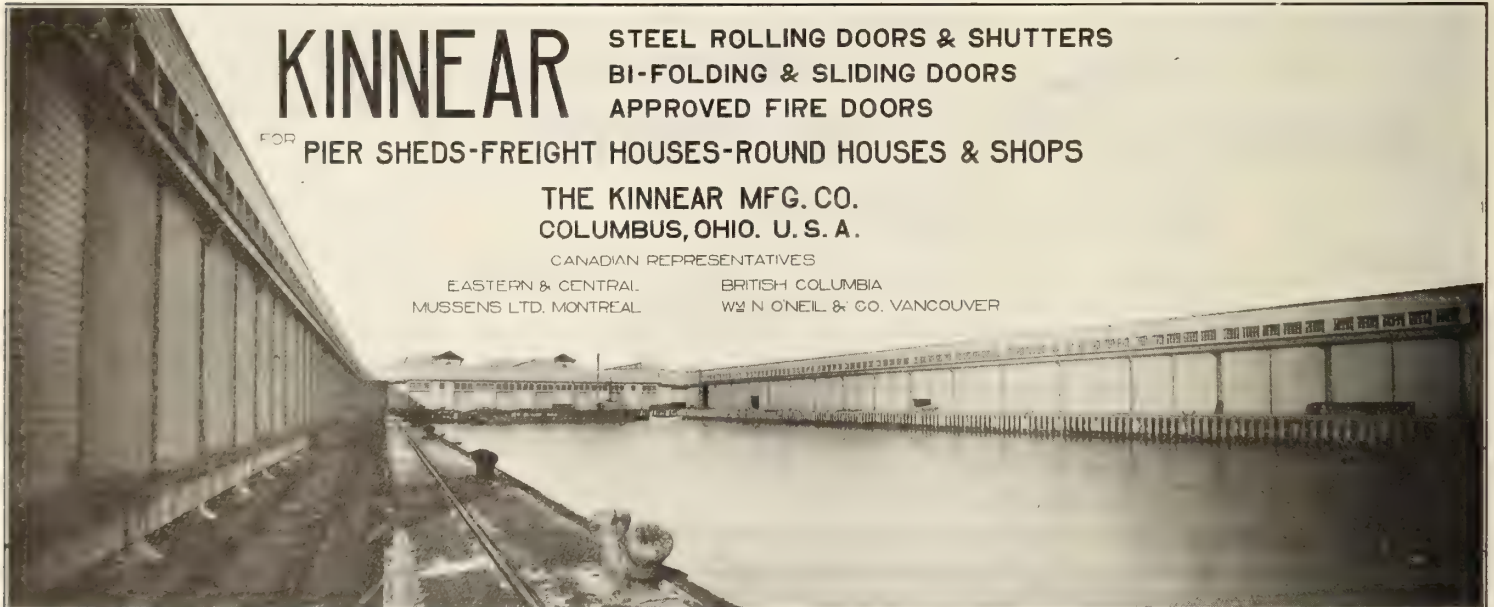
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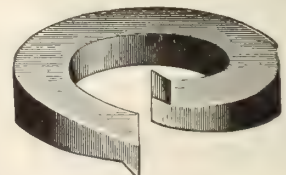


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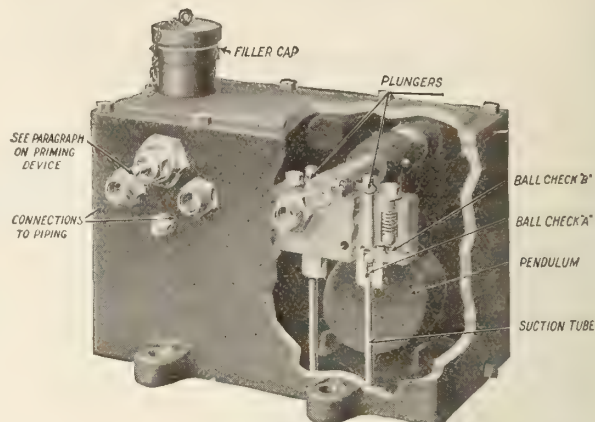
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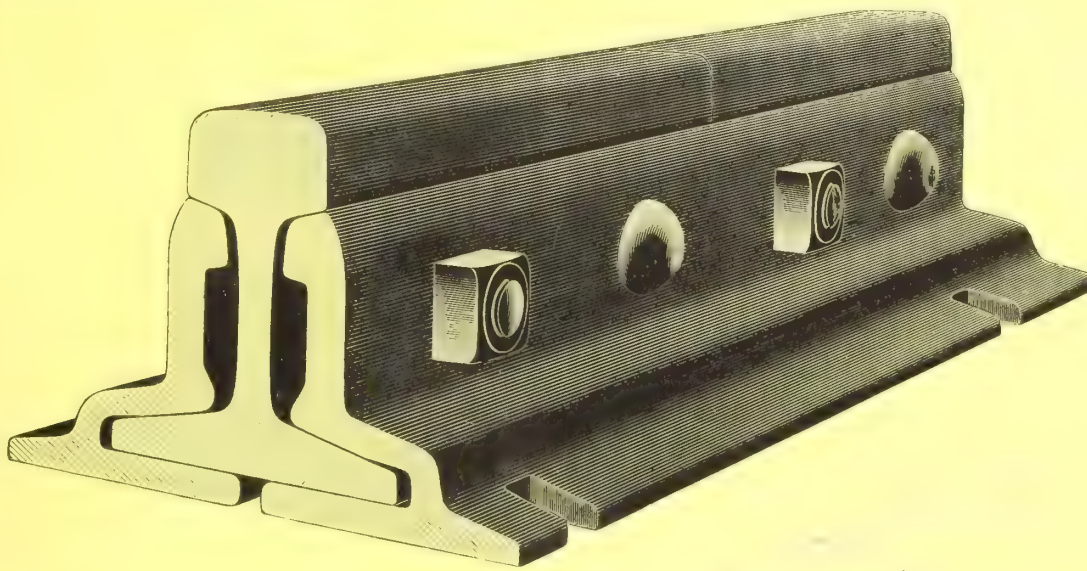
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Makers of Base-Supported and One Hundred Per Cent. Rail Joints for Standard, Girder, and Special Rail Sections. Also Joints for Frogs and Switches; Insulated Rail Joints, and Step or Compromise Rail Joints. Patented in Canada and the United States.



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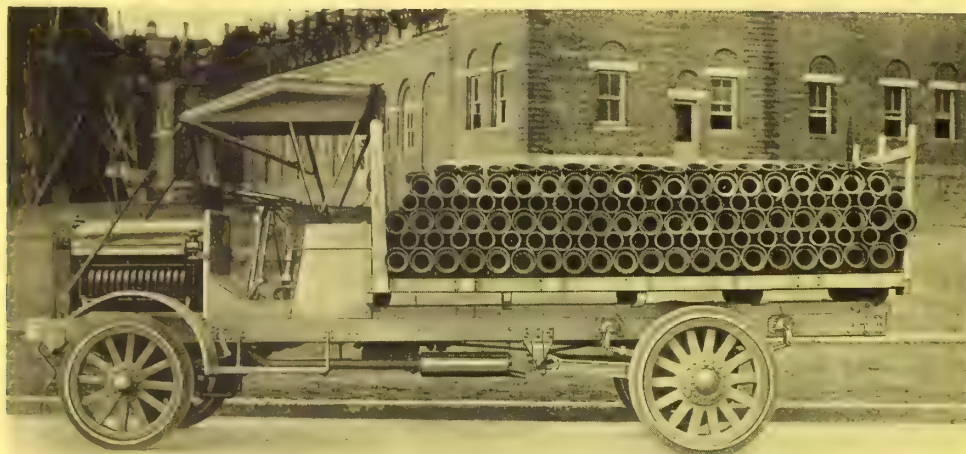
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**MOTOR** Waukesha, cast in pairs, 4-cylinder. Bore 2 ton  $4\frac{1}{4}$  ins.,  $3\frac{1}{2}$  ton  $4\frac{1}{2}$  ins; stroke, 2 ton  $5\frac{3}{4}$  ins.,  $3\frac{1}{2}$  ton  $5\frac{3}{4}$  ins.

**STEERING GEAR** is of the Worm and Nut, fore and aft type, the trunion shaft carrying the Pitman arm is of heat-treated, nickel steel,  $1\frac{1}{2}$  ins. in diameter.

**FRONT AXLE** Timken 2 x 3 ins., 1-beam section.

**REAR AXLE** is the well-known Timken, David Brown worm drive. The driving strain is taken through radius rods attached to rear axle and frame.

**SPRINGS** are semi-elliptic front and rear, and are of silico-manganese steel, self lubricated. Front springs are 48 x 3 and rear springs are 52 x 3. All spring-eyes punched.

## National Steel Car Company, Limited

Montreal Office :  
Shaughnessy Building

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